

MILITARY MEDICINE

ORIGINAL ARTICLES

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The Practice of Medicine*

By

MAJOR GENERAL T. J. HARTFORD, MC, U. S. Army
The Deputy Surgeon General of the Army

Study does not end with graduation but must continue for the remainder of a person's life. The application of the newer knowledge must be combined with the art of medicine, a doctor-patient relationship to be learned by each individual.

IT IS A distinct privilege and pleasure for me to join with your commanding general and his staff in honoring you, the residents and interns who, for the most part, will soon depart this command. I bring you and the staff of Walter Reed General Hospital, which has assisted in your training, the warm congratulations of General Heaton, The Surgeon General, and his entire staff. We are sure you have looked forward to this day.

Since you have successfully negotiated this distance down the path to the goal you have set for yourself, we know that, if you are willing to make the effort, you can reach your succeeding goals.

It has been traditional that speakers at graduation exercises tender unsolicited advice. In keeping with this tradition, I wish to impart to you very briefly some of my philosophy on medical practice. When I speak of the practice of medicine, in these brief remarks, I mean it to include all members of the health team—doctors, dentists, nurses, members of the Army Medical specialist Corps, technicians, and so forth. I

think we all realize the benefits derived by patients from the contributions by the members of these various groups.

If you are to find a real rewarding satisfaction in your work, regardless of what specialty in medicine or dentistry you select, if your life is to be purposeful and crowned with a satisfactory level of achievement, it is most important that you continue to be a growing person. Certainly your education does not end here. Study, and the constant self-improvement that comes as a result of it, continue to the end of life. This does not mean you must become famous or a recognized authority necessarily. There are only a few geniuses in any generation, but the faithful accomplishment of daily duties and continued self-improvement are within the capabilities of each of us.

Ours is a noble profession. We are privileged to serve our fellow man as few are able to do. We share with our patients the most intimate details in their daily living. It is well, also, to remember, especially in these troubled times, that, of all the areas of international effort in which there is an exchange and sharing of mutually advantageous processes, the broad fields of medicine are among the oldest and most beneficial to mankind and have been characterized throughout

* Presented at the graduation exercises for residents and interns, Walter Reed General Hospital, Washington, D.C., June 24, 1960.

years as the least political and controversial. Military medicine has pioneered the international aspects of medicine. Its contribution has greatly enhanced world economics, the safety and comfort of living and travel throughout the world, the general welfare of man, by conquering the health menaces of the world's more hostile environment, and the development of preventive and control measures for devastating diseases.

The benefits of medicine have never been bound or restricted by national frontiers, and there have ever been degrees of common meetings, common purposes, and common responsibilities of international military medicine even in time of war. The recognition by our State Department of the role that medicine can play in the furtherance of international good will has considerably increased the mission of the Army Medical Service in this area during the past few years. Some of the teaching staff here have made contributions of great benefit to our country through their professional treatment rendered to officials of great responsibility in friendly governments.

To the interns: I hope this year has enabled you to put into practice knowledge you have gained through long years of preparation, that you have had an opportunity to make a personal inventory of your abilities, and that you can now better plan your future.

To the residents: I hope you have had an opportunity to develop skill and gain experience in the art and science of the special field you have chosen, to establish good study habits, to think for yourself, and to be able to arrive at logical conclusions.

To you both: I hope that your training has enhanced not only your knowledge of the science of medicine but the art as well. The practice of medicine, to me, is a confluence fashioned by a delicate blending of two basic ingredients, both essential to a good doctor. One, the *science* of medicine, is that ever-increasing, broad stream of accumulated facts, the tributaries of which, regardless of size, have increased your over-all

technical knowledge. These scientific contributions live on after the passing of the donors—perhaps they may be honored by their discoveries being named for them. They serve as a foundation of investigation for succeeding generations of medical scientists. The other ingredient, the *art* of medicine, often spoken of as patient-doctor relationship, plays a paramount role in the successful application of scientific therapy. Unlike the science of medicine, the art cannot be handed down. True, we profit from good example, but each of us must develop the art anew. It has been said that "just as the strokes of a noted artist bringing life to the canvas are lost when the hand becomes lifeless" so the art of medicine is enfolded in the shrouds of the deceased doctor.

All of us may well be proud of the great progress made in the practice of medicine and dentistry. The quality of postgraduate training in the medical and dental fields has progressively improved. Each succeeding graduating medical and dental class has enjoyed the ever-increasing advantage of new techniques and the fruits of research in clinical areas. Those of us who have been out of medical school for a long time look with some envy on the curricula of the modern medical and dental schools. It must be our aim to insure, by our vigilance, that this progress is continuous. This progress, as so frequently happens, has not all been on the plus side. There has been, of necessity, in the rise of specialization, a fragmentation of the body into structural and functional systems. Medicine and dentistry, as practiced today, are admittedly a great deal more adequate. One has only to turn to our mortality and morbidity rates for the proof, but with this great degree of specialization, necessary though it may be, has come the undesirable tendency to lose sight of the patient as an individual. I think there is something sadly lacking when the individual patient becomes a disease entity, complex or statistic. My plea is that we continue our efforts to improve the science of medicine but that we not forget the art. Therapy, dispensed with

personal warmth, close understanding, compassion and mutual respect, is far more effective than the cold, impersonal assembly-line type of medicine we sometimes see, regardless of how scientifically correct the latter tends to be. Our objective should be to serve humanity with full respect for the dignity of man. As pointed out by Doctor Orr, President of the American Medical Association, in his inaugural address in speaking of medical school graduates: "They must be dedicated men and women who have a profound, sincere realization of their obligation to their patient and to all humanity. That is why it is important in the recruitment program to place emphasis on the quality of the graduate rather than on the quantity of students."

The true doctor, the individual who has the deep respect of his associates and patients, combines in his treatment the proper proportions of the science and the art of medicine so that the best techniques of the time are applied to the patient in a vehicle leavened by the milk of human kindness. Each of you should strive to be this type of doctor. Your graduation this afternoon from this famed institution represents another milestone in your growth as a mature man of medicine or dentistry.

Let me leave you with this thought. In the practice of medicine, the hand and heart should be partners.

May I wish you good health, happiness, great success in your profession, and God-speed.



IF YOU HAVE NOT ALREADY DONE SO COMPLETE YOUR PLANS NOW FOR ATTENDING OUR 67TH ANNUAL MEETING AT THE MAYFLOWER HOTEL, WASHINGTON, D.C., OCTOBER 31, NOVEMBER 1 AND 2.

Selective Malfunctioning of the Human Machine*

New Horizons in Chemical Warfare

By

LIEUTENANT COLONEL DOUGLAS LINDSEY, MC, U. S. Army†

IT IS not at all trite to state that there is a "new look" in chemical warfare. Perhaps the form and substance and trappings have not really changed but there is certainly an increase in the number of interested glances which are cast our way. In one way or another, the subject is noticeably more attractive, both to our own forces, and to those of the enemy.

It is virtually impossible for the practitioner of military medicine to prepare himself for broadening responsibilities in this field without first acquiring some knowledge about *what* it is that he faces. What are the agents which may be used against us? Not our own agents, of course, but those of the enemy. We know about some of the agents which the enemy *does* have, but we can not be sure *how much* we know or *don't know* about types of agents which he *MAY* have. Aside from types of agents, we must know the dimensions of the problem in terms of number or percentage of casualties, severity of casualties, and speed of occurrence. This brings us in close contact with the strategy, tactics, and *military effectiveness* of chemical weapons.

For all practical purposes, the potential of chemical warfare prior to World War II could be oversimplified and considered on the basis of contact irritation: irritation of the lung, after inhalation; and irritation of the skin or eyes, on contact. Although there are many differences in the details, there is an essential similarity of action in the group of agents which includes chlorine, phosgene, chlorpicrin, and inhaled mustard. They irritate the lining of the respiratory tree, and

cause inflammation, necrosis, or pulmonary edema. Of the agents which attack the skin, mustard is the prime example. It is not directly "corrosive," so to speak, but produces severe burns by a complex biological action. Nevertheless, it can be considered an example of the (admittedly oversimplified) concept of irritation by contact.

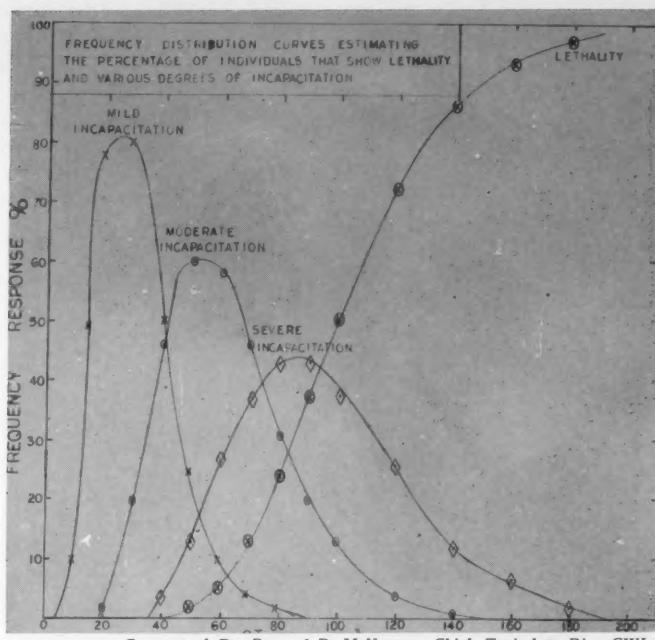
Although there are isolated incidents to the contrary, it is not unfair to state that it was not until World War II that the military medical profession at large became impressed with the importance of chemical agents as *systemic poisons*, apart from any direct "irritant" action. The Bari incident was a strong stimulus to this awareness.

The next step, also in World War II, was to the development of a series of agents without irritant action, but with profound systemic effects. This was the "G" series of anticholinesterase agents, typified by GB and GA, or sarin and tabun, as they were known to the Germans, who developed them. Be assured that when knowledge of these agents reached the Allies in World War II it made a profound impression. The impression on scientists in chemical warfare research was likewise profound; it has persisted to the present, and will carry on long into the future. It may be pertinent to note that, while the U. S. and British forces captured the formulae and the samples, the Russians captured the plant and the chemists.

These are powerful agents, and they will be standard and reliable chemical weapons for a long time. They have a remarkably rapid action in concentrations which are readily attainable in the field. One deep breath may be sufficient for inhalation of a lethal dose. Symptoms develop rapidly, and the whole show is essentially over in 10 minutes (Figures 1 and 2). Those who are going to die are usually dead by then; the others may be in-

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† Director of Medical Research, U. S. Army Chemical Warfare Laboratories, Army Chemical Center, Maryland.



Courtesy of Dr. Bernard P. McNamara, Chief, Toxicology Div., CWL.

FIG. 1. Frequency response of individuals to varying doses (concentration X time). At any given dose between the upper and lower extremes, there is a relatively wide range of clinical response.

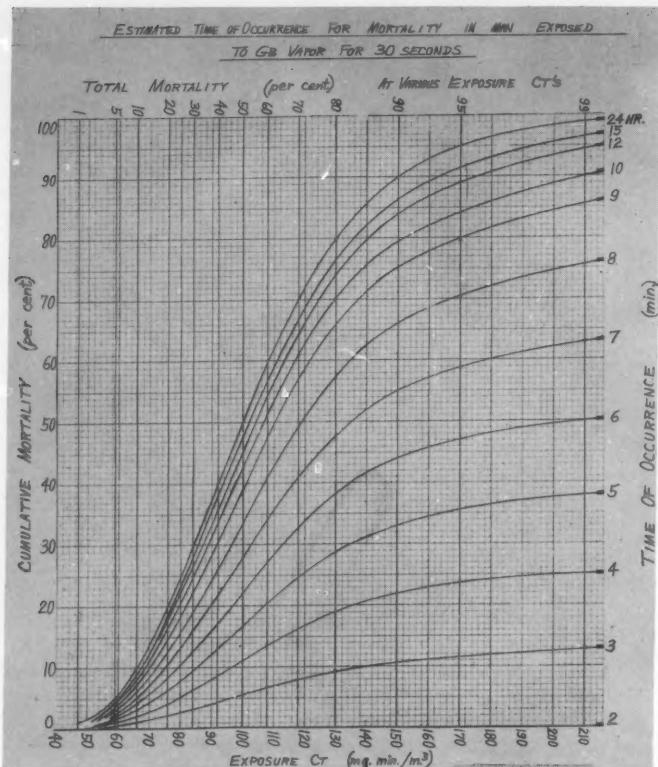
capacitated, but they will usually recover in due time.

The answer to these agents, of course, is not to take even a single deep breath. With good detection devices and alarm systems, with good gas masks (which all modern armies have), and with superb gas training and discipline (which not all modern armies do have all the time), it is possible to neutralize the power of the G agents.

Now a new development has come along to confuse the picture. Anticholinesterase toxics of low volatility are available. When deposited on the skin these compounds do not evaporate and blow away (relatively harmlessly, to a masked individual). They are highly toxic. The exposed skin of the back of the hand, or even a single ear lobe, is a sufficient portal of entry. The deposition may be made in the form of a tiny, but visible droplet, which goes unnoticed, because it is quite painless, and symptomless except systemically. Or

the deposition may be in the form of impaction of a subvisible, fog-like aerosol.

The effectiveness of the percutaneous route, and the pharmacology of anticholinesterase agent poisoning, can be readily illustrated by the application of one of these compounds to the skin of a rabbit. One can place a minute droplet on the skin of the rabbit—so small that it would be invisible to an observer a few feet away—and the rabbit will die in a matter of minutes. There is a short delay time while the agent is penetrating through the skin. The first symptom is usually muscle fasciculations in the local area around the site of deposition of the droplet. Generalized fasciculations, tremors, muscular weakness, and paralysis quickly follow. With bronchoconstriction, salivation, paralysis of respiratory muscles, and central nervous depression, cyanosis progresses rapidly. There is profound miosis. The animals usually, but not always, convulse. As best we can extrapolate



Courtesy of Mr. Paul Cresthull, Gassing Branch, Toxicology Div., CWL.

FIG. 2. Cumulative mortality and time to death after varying doses (concentration X time). With this particular agent, the show is essentially over in 10 minutes after exposure.

late from experiences with accidental exposure to similar chemical compounds, the whole process is quite painless.

With currently available means of tactical delivery of such materials, it is quite feasible for an enemy to blanket a major military unit with enough of one of these agents to produce 30% casualties. With the G agents, this percentage figure is based on the assumption that troops have masks, but take a mean time of 15 seconds to obtain their masks and put them on, and that they take at least one deep breath in that interval. The percentage figure for the percutaneous agent is based on the assumption that the troops are already masked, or that they accomplish masking without breathing, but that they are not completely

covered with effective protective clothing. With G, casualties will occur within a minute or two of the time of exposure. With a percutaneous agent, the time to take effect will be somewhat longer.

If we assume that the target is a battle group of the United States Army, then 30% casualties represents a little over 400 casualties out of some 1400 men. What happens to these 400 men?

Due to variations in distribution of agent on the battlefield, and variations in efficiency of protective measures taken, not all of these men will have received the same dose. Due to variations in biological susceptibility, not all men will respond in the same way to the same dose particularly in the lower dosage ranges.

For these reasons, there will normally be some considerable variation in clinical severity. As a very rough illustrative approximation, we might classify the casualties by treatment requirements and prognosis about as follows:

One hundred of the men will have received something less than a lethal dose. They will get well whether they do anything right or not, but they may be incapacitated for several hours.

A second hundred men will have received a lethal dose, but not much more. These men will survive, even if their treatment is limited to self injection with the atropine that each soldier will carry. Even though the atropine will save their lives, these men will be "casualties" in the terms of military non-effectiveness, at least for a few hours.

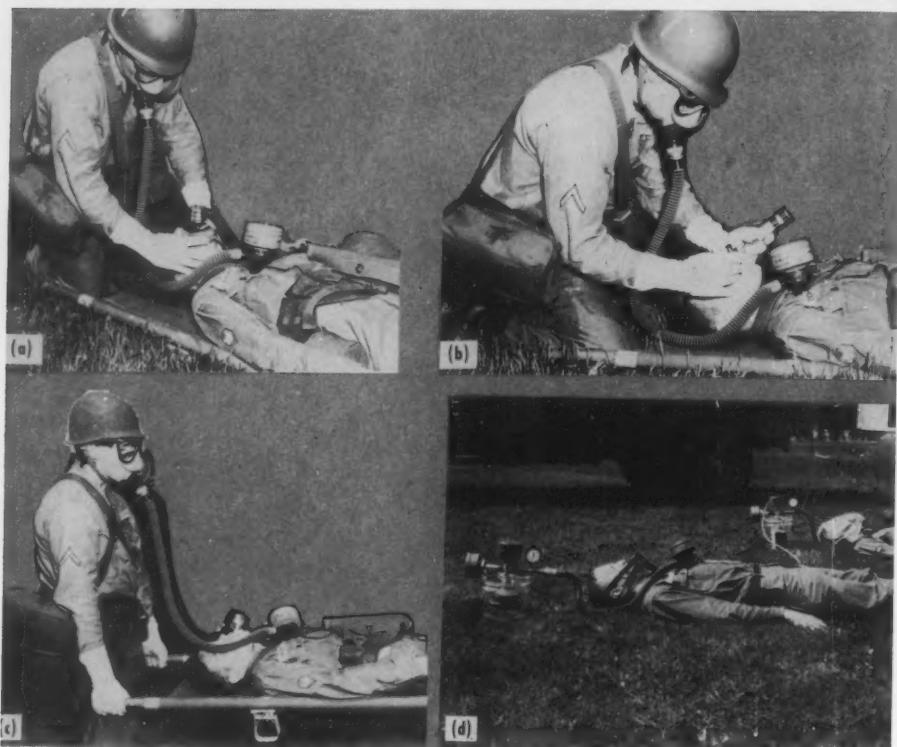
The third hundred men will have received quite a few lethal doses. These men are salvageable with atropine alone, but this requires far more than the single syrette the soldier carries. Each syrette contains 2 mgm of atropine, or 1/30th of a grain. In terms of clinical practice, this is a considerable dose, but in terms of severe anticholinesterase agent poisoning, it is just a beginning. The severely poisoned casualty must receive massive doses of atropine, until he begins to show signs of atropinization; it may take as much as 200-300 mgm for atropinization to be evident when the atropine has to overcome the effect of a heavy dose of the anticholinesterase agent. This dose must be given, or at least started, within 3-5 minutes after exposure. And intramuscular administration will not suffice; the injection must be into a vein, or into the heart or even by long needle directly into the substance of the lung.

The last one hundred men will have received a massive dose, but in all probability under field conditions they will not have received as much as 50 LD. These men will be beyond salvage by atropine alone, even massive atropine. In order to survive, they must have effective artificial respiration, begun immediately and continued without interruption for something on the order of 1-6 hours. When we say effective artificial respiration, we mean something quite specific. Due to the

profuse salivation, and marked increase in pulmonary impedance, the pressure methods of artificial respiration (Schafer, Holger-Nielsen) simply will not work. You can push air out of the lungs, all right, but nothing comes back in. Mouth-to-mouth insufflation is effective, but a neat practical question arises as to how one performs mouth-to-mouth resuscitation in a gas-contaminated atmosphere. The answer, of course, is mask-to-mask respiration, but this is not as simple as it seems. In both mouth-to-mouth and mask-to-mask respiration the upper airway must be kept open. This can be done by manual elevation of the jaw, but manual elevation cannot be maintained during litter evacuation. There are differences of opinion as to how this should be done, but the consensus at the Chemical Warfare Laboratories is that the situation requires the insertion of a cuffed endotracheal tube. It has been proved (at least to our satisfaction) that a layman recruit can be readily trained to do this job (Figure 3).

In discussing the therapy and prognosis of this group of 400 "nerve gas" casualties, no mention has been made of the oximes, such as 2-PAM (2-pyridine aldoxime methiodide). We know that the oximes are valuable in the treatment of anticholinesterase agent poisoning. We are quite certain that they have a place in the field management of anticholinesterase poisoning; we know what that place is in terms of relieving peripheral neuromuscular block, and returning casualties to duty as soon as possible; we are not certain as yet what the place of these drugs is in terms of saving lives, and in terms of administration immediately after poisoning. This subject is worth a separate presentation in itself.

Suffice it to say that certain of the oximes show promise as oral prophylactic medication. Unconfirmed laboratory data indicate that with an adequate oral dose of certain of the oximes about 2 hours prior to exposure (before an anticipated enemy attack, or before entering an area which is known or expected to be contaminated), a pharmacological base is prepared so that a single syrette of atropine may suffice to protect against death



Courtesy of Capt. Robt. F. Hustead, Clinical Investigation Br., Clin. Research Div., CWL.

FIG. 3. Respiratory resuscitation for severe anticholinesterase agent poisoning.

- (a) Mask to mask resuscitator to establish alveolar ventilation;
- (b) Endotracheal intubation if air passageway is inadequate or if transportation contemplated;
- (c) Evacuation and ventilation;
- (d) "Edgewood Resuscitator" to maintain ventilation at collecting station—or for further evacuation.

from as high as 8 lethal doses of an anti-cholinesterase agent. Without the oxime, a single syrette of atropine is quite ineffective against such a heavy dose. The oxime alone (without atropine) is almost no help at all.

In terms of therapeutics, the oximes offer great promise in relieving peripheral neuromuscular symptoms—facilitating more rapid return to duty in less serious cases, and significantly lessening the need for, and duration of, artificial respiration.

It is evident that this scheme of treatment and prognosis on this hypothetical group of 400 men indicates the possibility that all, or virtually all of them can be saved from death. This is certainly true from a theoretical and

technical standpoint. From a practical and tactical standpoint, this is certainly overoptimistic. With the present allocation of aidmen, and current concepts for dispersion, can one aidman cover a platoon over a 1200 meter front in 3-5 minutes? Are our aidmen trained, as yet, to judge dose and rate of administration of atropine on the basis of pharmacological response? We consider them trained to give an intravenous injection—how about intracardiac or intrapulmonary? When a unit has just lost 400 out of 1400 men, and has reason to expect an enemy ground attack after the chemical barrage, can the commander afford to pull 100 or 200 of the remaining men off the guns to administer arti-

ficial respiration to the most serious casualties?

With practical limitations such as these still extant on the effectiveness of our regimen of treatment, we have both critics and idealists, both in the medical research field and without it, who feel that we should continue or intensify the search for a simple "red pill" to completely neutralize the effect of anticholinesterase agents. Personally, and not officially, I think not. For one thing, we have too much work which has been left undone with respect to other agents, and by comparative standards, we *do* have a good capability in treatment. Compare, for example, with treatment and prognosis following ordinary missile wounds. A 1 mm hole through the heart is less than a lethal "dose" of missiles; a 2 mm hole through the heart is roughly one LD₅₀. Suppose we consider a 4 mm hole, then. Regardless of whether we compute the LD here by diameter or by area, we must admit that the result does not come close to 50 LD. We can save a man from 50 LD of anticholinesterase agents, but I doubt if we would save very many with even 10 LD of heart wounds, even if they were wounded on the front steps of the hospital.

In addition to the study and development of agents which kill, there is widespread and increasing research interest in agents which are *not* lethal, but which produce some sort of incapacitation. The generally accepted definition of such agents does not specify the mode of incapacitation or its duration, and it logically leaves open the question of type or degree of effect required to incapacitate. All that is required is that there be some sort of effect which prevents the affected subject from performing his normal military duties. The requisite effect might be quite different for a jet pilot as compared to a rifleman in defense.

Why should an enemy be willing to accept a sub-lethal agent, instead of a lethal agent? Or, more pointedly, why should he go out of his way to avidly seek for non-lethal agents? Perhaps this is the moment to explain why we feel that chemical weapons are powerful weapons, even when piled up in a national

arsenal which includes fission and fusion nuclear weapons.

Nuclear weapons are powerful; it is trite to have to say so. However, they suffer from two major defects. They are charged with strong international emotions, and diplomatic implications. It is not unreasonable to consider that they may be banned, and that the ban might well hold even during actual war. Even if they are not formally banned, an astute enemy (and the only safe course is to assume that our enemy may be astute) may well choose not to use them in certain circumstances. Nuclear weapons *destroy* their targets—both men and machines are gone. On the other hand, chemical weapons do not destroy buildings, equipment, and materiel. Lethal chemical weapons do destroy people, but their tools and machines are left intact, either to be carried off as reparations (the course of the enemy), or to be used for the support and rehabilitation of the remaining population (the course of the United States). Non-lethal, incapacitating agents destroy *neither* the population nor their material resources. The population can be incapacitated, and captured or subdued, and then returned to productive work. Further—a peculiar advantage of non-lethal agents—incapacitating agents can be used against mixed friendly and enemy populations. While both sides are incapacitated, the separation can be made. The friendly population recovers; the enemy recovers in a prison compound.

In the field of non-lethal, incapacitating agents, there has been, in my opinion, too much emphasis on "psychochemicals," and not enough on *physical* incapacitation. Psychochemicals are worthy of some notice, but certainly they are not the whole story.

The term "psychochemical" is broad, and not too specific. There are two terms of somewhat greater specificity, which seemed to be used almost interchangeably, but without good semantic justification. "Psychotropic" drugs have a tropism or affinity for the psyche, or, presumably, the central nervous system. This term indicates the site or the "seat" of the action, but not necessarily its qualitative characteristics or quantitative ef-

fect. "Psychotomimetic" drugs are those whose effects mimic insanity or psychosis. Presumably there is a characteristic qualitative effect on the mind, or central nervous system, but this presumption may not give a clear picture of the biochemical or pharmacological site of primary action.

Of the psychotomimetic group, a number of compounds are known. Many of these show a marked steric resemblance to 5-hydroxy tryptamine or serotonin. We could dwell for several hours on the pharmacology of the ergotropic and somatotropic systems, but suffice it to say that we have considerable reason to be interested in compounds such as bufotenin, psilocybin, and d-lysergic acid diethylamide (LSD-25). We follow with interest the work in the open literature. We are carrying out some work of our own. We know that our potential enemies are interested in compounds of this group.

We are interested, too, in the vast class of "atropine substitutes." For example, some of these compounds cause hallucinations, in rather low doses. This is not to say that we accept a visual hallucination as *prima facie* evidence of incapacitation. It may be possible to so dose a man that he would describe an enemy soldier as green-and-purple-striped, cuboidal, and 9 feet tall, but this is not incapacitation so long as he can still recognize this apparition as an enemy, and can shoot him or impale him on a bayonet.

When we go from "psychotomimetic" to "psychotropic," we have a wider range of compounds to deal with. Psychotropic compounds include stimulants, such as amphetamine; tranquilizers, such as the phenothiazines; sedatives, such as the barbiturates; and many others.

I do not think that we are splitting hairs when we make these distinctions. All the field commander wants is military incapacitation, and it is immaterial to him whether this is obtained by over-excitation, sedation, or psychosis. For example, it is not necessary with a psychological incapacitating agent to drive a man crazy. Incapacitation can be obtained by more subtle effects. For example, by im-

pairing the man's ability to integrate time and distance. If this is done, I think you will agree that the man could not land a jet, con a ship from the bridge, or fire a gun from, or at, a moving tank.

Some of our research on certain psychotomimetic compounds has been publicized on television and in the lay press: a drugged cat—terrified at the sight of a harmless laboratory mouse.

The point of this work is not that the cat is afraid of the mouse, but simply that we have changed the *normal* psychological reaction of the animal. Some cats are not afraid of the mouse, but appear to show a deep affection for it, and mother it as a kitten.

So much for psychological incapacitation. I feel it preferable to point up physical incapacitation, at least until such time as a balance of emphasis is restored.

In order for a soldier (or civilian) to be effective, he must not only be able to think, he must be able to see and hear, stand and move (usually), and effectively manipulate his weapons or tools. In consequence, it is theoretically possible to incapacitate by interfering with any one of these things. And this is more than *theoretically* possible. Compounds are available, which are active in milligram dosage, and which produce significant or profound disturbances of these types—impairment of vision (physiological, not optical); impairment of hearing; postural hypotension of such degree that standing is impossible; paralysis; rigidity; tremors; convulsions; paralysis agitans or Parkinsonism. I refer, of course, to *physiological* Parkinsonism, not *administrative* Parkinsonism. I dare say, however, that if it were pharmacologically possible for an enemy to intensify administrative Parkinsonism in our armed forces or our industry, we should certainly make preparations to counter it.

There are other more general or more subtle ways of producing incapacitation—induction of severe symptomatic nausea, blocking of labyrinthine reflexes, or interference with ability to regulate body temperature.

It is quite obvious that an adequate prep-

aration for medical defense against agents of the enemy means that we must prepare for anything. Our interests in medical research in the Chemical Warfare Laboratories necessarily encompass the entire field of pharmacology.

One of the few developments in this field which can be presented openly is a compound which produces a marked ascending spinal paralysis. With increasing (but still minute) doses, the experimental subject first loses ability to stand, and sinks quietly down on his haunches; then comes loss of function of the upper extremities, but diaphragmatic function continues. Depending on dose, spontaneous recovery occurs in 1-24 hours, without apparent ill-effects of a permanent nature. A studious examination of the physiological

effects suggests the antidote or treatment. We have proven this out in practice, and can pharmacologically reverse the process at will.

This is the key to our theme. Since we do not know, and never will know exactly what the enemy is going to throw at us, or when, the military medical profession must be prepared for anything. Quick clinical diagnosis; logical appraisal; and rational immediate counteraction are required. These things can be obtained only from a profession which is well-grounded in basic medical sciences and backed by the judgment obtained from wide clinical experience. Technical manuals will never alone suffice.

Certainly in the field of chemical warfare, the practice of military medicine is broadening in concept with almost explosive speed.



HAVE YOU MADE YOUR HOTEL ARRANGEMENTS FOR THE 67TH
ANNUAL MEETING OF THE ASSOCIATION?

Trends in Mental Hygiene*

By

PAUL H. HOCH, M.D.[†]

PSYCHIATRY is undergoing considerable change because of developments in therapy, in methods of hospital management, and in new ventures in community mental health. To these there are additional new goals in training and research.

At first I wish to discuss trends in treatment. Since its inception, psychiatry has employed different treatment procedures. Many treatments were used and later abandoned. This, of course, is not characteristic for psychiatry alone but with medicine in general when newer developments take place, older therapeutic practices are superseded by better ones. In the last twenty-five years treatment methods have influenced mental sickness much more broadly and effectively than therapies before. In the 1930's we saw the introduction of the shock therapies, and in rapid succession, insulin, metrazol, and electroshock, their combinations and variants. A few years ago treatment with tranquilizing drugs and most recently with anti-depressant drugs became popular. At the same time the new somatic therapies arrived, psychotherapy in individual or group therapy form was being used increasingly in the treatment of different emotional disorders. Based upon observations and experiences with these different treatments, some therapeutic trends can be detected. Insulin and electroshock therapy were very popular in the 30's but today they are used on a much reduced scale. The tranquilizing drugs alone or in combination with the different psychotherapies (individual, group,

milieu) replaced the use of the shock treatment in schizophrenia.

The exceptions are those cases which do not respond to drug treatment, and we see these patients occasionally. There are schizophrenic patients who did not respond to drugs but responded to insulin. The primary use of insulin is becoming rare. In most patients today the first treatment attempt is made with drugs. However, if the response is not adequate, these patients still should be treated with insulin. This is especially important in acute and sub-acute cases where the probability of a remission is great with adequate treatment. Depressive forms of schizophrenia still benefit from electroshock therapy.

The situation is somewhat different in the use of energizers in depressions. In the last two decades ECT has been the choice of treatment because of its rapid action and because most depressions responded to ECT. The anti-depressant drugs which we have today are a significant progress in psychiatric therapies, but their efficacy is much less than the tranquilizing drugs. The recovery statistics vary between 30-50%. In my own opinion the 30% is closer to the mark. This indicates that a considerable number of depressed patients are still in need of electroshock, but it is to be hoped that in the near future new chemical compounds will be available which will cure depressions at least as effectively as the tranquilizing drugs are able to influence a schizophrenic psychosis.

In the last few years a considerable number of treatments have been introduced. The most outstanding of these was chlorpromazine, its many variants, and the Rauwolfa preparations. Other drugs have been introduced as tranquilizers, but either they are not as effective as the two compounds mentioned above or are still in a state of evaluation. In my personal experience the different chlorpromazine preparations are superior to Rau-

* The William C. Porter Lecture presented November 10, 1959, during the 66th Annual Convention of the Association of Military Surgeons of the United States held in Washington, D.C. This Lecture was made possible through the courtesy of Smith Kline & French Laboratories of Philadelphia to whom we are indeed grateful.

[†] Commissioner of Mental Hygiene, State of New York; Professor of Clinical Psychiatry, College of Physicians and Surgeons, Columbia University.

wolfa even though they may have more side effects. Today tranquilizing drugs are used in psychiatry for practically every condition with the exception of straight depressions. Here they are not indicated or even contraindicated because they can precipitate or aggravate a depressive state. Tranquilizing drugs have been an especially important contribution in the treatment of schizophrenia. This disease entity constitutes the majority of our hospitalized patients and also on the ambulatory level is one of the most common disorders.

A great deal of research has been done with the drugs in these patients. Some authors reported such excellent results that in some quarters the impression was created that a safe and completely reliable treatment had been found which could influence schizophrenia to such an extent that these patients could be treated as ambulatory patients and would not require hospitalization. This, in turn, led to the suggestion that we do not need any hospital construction or only a few very small hospitals. There is no question that these drugs have made an important contribution to the treatment of schizophrenia and that many schizophrenics respond to them; it is equally true that in all those schizophrenics who respond, quite a number of them who responded initially, relapse. Furthermore, we do not know how many of these patients who are treated successfully in an acute phase of the disorder later have a recurrence of the symptoms which finally leads to chronicity. Hospitals are filled with chronic schizophrenic patients even though the treatment of the chronic schizophrenics today is far more fruitful in accomplishment than before. However, still the percentage of the chronic patients responding to the drugs, and as a matter of fact, to any other treatment, is only between 5-10%. This is an impressive figure compared to a time when practically no treatment methods existed for chronic schizophrenics; it is still a far cry for an effective treatment of this disorder. One of the most important issues for us to know will be how many of our now successfully treated schizophrenic patients will become chronic. As long as we do

not have reliable data on this score, we will not be able to change our hospital policies to any large extent.

The use of these drugs in acute schizophrenia is also not uniform. Different forms of schizophrenia respond differently. The best results are obtained in the catatonic and paranoid forms of this disorder. All clinicians employing drug treatment in schizophrenia have seen that these drugs control excitement and that schizophrenics sometimes responded very quickly and did not have to be sent to a hospital. However, admission rates to the mental hospitals have not dropped even though the tranquilizing drugs are widely used. To the contrary, the hospital admissions have increased impressively in the last few years. It is obvious that depressed, suicidal, aggressive, and asocial schizophrenic patients even today have to be treated first in a hospital setting. Treatment outside of a hospital is only possible if proper supervision and cooperation can be obtained from the patient's immediate environment.

The tranquilizing drugs are also used today in arteriosclerosis, the senile psychoses, in alcoholism, and in many other conditions where they are very effective on a symptomatic level. One of the most extensive uses, especially with the more mild tranquilizing drugs, is seen in the psychoneuroses. Here we know far less about what they are doing than in treatment of the major mental disorders. Neurotic patients are usually treated in ambulatory settings where it is far more difficult to appraise the different factors which may influence a neurotic symptomatology. Furthermore, in the hospital setting controls can be used to evaluate drug action. In psychoneurotic patients if the symptoms consist mainly of anxiety, or tension, these symptoms are often reduced or eliminated but in others with a similar symptomatology the symptoms remain unchanged or even become aggravated. Many psychiatrists reporting the use of the drugs in psychoneurotics express the fear that these patients are rendered too comfortable by the drug and therefore lack motivation for psychotherapy. I have not seen this occur. Most patients even though com-

fortable with the drug wanted psychotherapy and were quite satisfied when the drug was gradually reduced or eliminated. It is true that there are patients who would like to take the drug alone—without psychotherapy, but if psychotherapy is available and can be afforded most patients accept it. All these patients are aware of the fact that if the anxiety or some other symptoms are quantitatively reduced by the drugs, they still have problems of adaptation which can be adjusted only with psychotherapy. This, of course, applies equally to a great many of the schizophrenic patients who, even though they lose their symptoms under the influence of the drug, have personal problems of adaptation to the environment. These problems are not automatically taken care of by the administration of the drugs.

A great deal of investigative work has been going on in the last few years to elucidate the action of these drugs, but we are still not able to state how they influence mental disorders. Our dilemma is twofold. First, we do not know the etiology of most mental disorders and this is especially true about the most frequent, manic-depressive psychosis and schizophrenia. Second, we have only hypotheses but no established knowledge how the drugs act on the nervous system, which in turn influences psychic behavior. Therefore, the drug treatments are still on an empirical level. This should not in any way interfere with their broad application because we have had many very effective treatment methods in medicine long before we knew the etiology of the disorders or the action patterns of the treatment.

I do not want to go into the progress which has been made in different psychotherapies because this could not be discussed without going into many technical details. I only would like to state in general that a constant reexamination is made of fundamental theoretical concepts as they pertain to psychotherapy. Here we need still a great deal of research to make our psychotherapies shorter, more incisive, and to adapt them more effectively to the different psychiatric conditions we treat. This will be one of the larger major tasks which psychiatry will have to perform

in the near future. A great many of our psychoanalytic and psychotherapeutic techniques benefit a relatively small number of persons, which is in pitiful contrast to the large number of persons who want and deserve psychiatric attention and care.

THE OPEN HOSPITAL

One of the great developments in psychiatry is the fundamental change in hospital management. This expresses itself in changes in the hospital organization, in studies showing the sociological factors, in hospital atmosphere in relating the hospital to the community and to other psychiatric facilities, and finally the form of hospital organization which can be called the "open hospital." Open hospital means that the patient is not locked in, that he can move freely to any part of the hospital and the grounds, and in many instances can even leave the hospital grounds and visit the community.

The treatment of the mentally ill has always been approached in most civilizations with a certain ambivalence. In some civilizations the mentally ill were considered harmless and were even venerated. In our Western civilization an entirely different attitude grew. It was assumed that the mentally ill were not responsible and that they should be segregated from the population because they were dangerous to themselves and to others. This led to a hospital organization where they were detained and kept; this is usually called custodial care. Concomitant with this attitude was the prevailing notion that even though they were considered sick, some correctional measures should be applied; especially if they were aggressive, they should be isolated and restraint should be used. Because the mentally ill were considered something different, a great many legal "safeguards" came about which consisted of making it difficult to admit a patient to a mental institution. On the other hand, it also made it difficult to release a patient from a mental institution. The closed hospital and these legal safeguards were elaborated upon in the 19th and the earlier part of the 20th century. Since then attitudes began to change and the so-called asylums be-

came more and more hospitals, even though in many places they were hospitals in name only, it came to be recognized that the mental patients were sick people.

Since then it has been recognized that these people were sick, but only recently now that we have effective treatments for different forms of mental disease, are they fully accepted as equal with persons suffering from other diseases. Two preconceptions concerning the mentally ill are still very often brought up. One, it was assumed that every mentally sick person was automatically irresponsible. Actually this is the basis of the old idea of closed confinement and many of the legal and administrative restrictions which were placed upon them. Second, that they are potentially or actually dangerous, the place in which they are kept should have special security features; the closed hospital is the most representative example of this. As time went on it was recognized in many places that the above mentioned premises were not generally true and that the idea of irresponsibility and dangerousness of the mentally sick applied to any and all of them could be seriously challenged.

The general public is still convinced that many of the mentally sick will commit serious crimes. There is no question that some do. This is a very small minority, however, compared to the large number of patients who never infringe on the law; therefore, measures which would be applicable to a relatively small number of mentally ill should not be generalized and applied to all. Formerly we had some open wards in the hospitals which were the so-called convalescent wards, and a number of hospitals permitted trustworthy patients to have ground privileges—to leave the building where they were lodged. However, these arrangements for this special group of patients was the exception to the rule. Psychologically speaking, a closed hospital is based on a distrust of the patient with the exception of a few who are felt to be trusted. The open hospital is basically a hospital which trusts the patient and keeps only a few patients in closed wards considered too aggressive towards themselves or others. We believe that no more than 5-10% could be

considered dangerous. Their aggression is regulated in a faulty way, but it is unnecessary that the whole hospital system should now be restrictive even to those where such aggressive patterns are in evidence. Today we have reversed our approach and are able to demonstrate that the majority of mental patients can be trusted; and that a very high percentage of these patients do not behave differently than patients in general hospitals.

The open hospital movement in this century started in Great Britain and then spread to other countries. In New York State we now have about two-thirds of the patients in open wards. This is an overall figure. We have hospitals which are practically completely open or very close to it. But again there are hospitals which are only about 30-40% open. These divergencies are based upon conditions which are prevailing in that particular hospital and its surroundings. There are some hospitals where the community support and understanding is more advanced than in others. I believe that soon we will be able to equalize the number of open wards in the hospitals and it will be possible to maintain 85-90% open, the closed facilities being used only for patients who are called too aggressive or who need close supervision for other reasons. If our therapeutic techniques should improve further, probably it would be possible to run hospitals which are completely open. If this is achieved our mental institutions would approximate in their organization the spirit of the general hospital.

Based on the operation of the already open hospitals we are able to make a few fundamental observations. At first I would like to emphasize that the dignity of the patient is markedly enhanced. The patient is considered really as a patient and not a detained individual who receives some treatment on the side. Now the patient comes for help as any other sick person who seeks help from a hospital. I have already mentioned that in the open hospital we are able to trust most mentally ill patients far more than was previously assumed. A great many of the patients retain ability to control themselves and seemingly they exercise this control more willingly and

effectively in an atmosphere which is not restrictive. Hand in hand with this went a marked diminution of aggression. Many feared that the open hospitals would lead to a great deal of aggression, but just the reverse is true. Removal of restraint and removal of patients from isolation is very much advanced. The creation of an open and permissive atmosphere clearly shows that aggression breeds aggression and that a great deal of aggressive behavior of mental patients in the hospital is not so much a part of the mental disease but the patient's reaction to confinement and restrictive measures. Some expressed fear concerning the open hospital in that it would lead to all kinds of difficulties; that problems would arise due to mingling of the sexes, drinking, and other problems. Sporadically such problems have arisen, but I believe that they can be handled effectively.

The relationship between the patient and the personnel is very much improved. The patients now look upon the personnel as helpers in the therapeutic program and not as guards. This permits the personnel to establish a better contact with the patient, which of course leads to better interpersonal relations and in turn gives many patients the ability to handle their problems better. The whole atmosphere of the hospital generates a more therapeutic milieu.

In connection with the open hospital I would like to emphasize two important points. The open hospital itself will only prosper, and probably even survive, if proper activity programs are present in such hospitals. Simply opening up a hospital is not enough. We have such experiences in the last century when attempts were made but did not survive, partly because the activity programs for the patients were not organized and partly because no therapeutic measures were available. Some feel that the open hospital is therapy in itself. I do not want to belabor the point of what is therapy and what is not. I personally feel that the open hospital only creates an environment in which therapy can be practiced, and which is far more constructive for therapeutic efforts than a closed hospital. On the other hand, I do not believe that we

should feel that simply having an open hospital can replace the necessary unspecific and specific therapies which can be applied in mental disorders. For instance, I am sure that patients suffering from general paresis would have benefited in an open hospital. Nevertheless, this would not be enough for the treatment of their specific disorder. Even though the origin of the group of mental disorders we are dealing with today is not similar to general paresis, the basic idea is valid. In addition to the open hospital we, of course, need drug therapy, psychotherapy, and all other therapeutic measures now and in the future which will influence these disorders.

The open hospital in our opinion is but one great change in the attitude toward the mentally ill and will inevitably lead to other reforms. Of these I would like to mention the change in admission and discharge procedures. We are also more and more concerned with changes in the criminal code regarding the mentally ill and the relationship of the mental hospital to community psychiatry. The admission of mental patients to the hospitals formerly was done based on strict commitment procedures. These commitment procedures were introduced essentially to protect the person so that he should not be sent to a place where he could be indefinitely detained without sufficient reason. As the mental hospital became more and more a place of treatment and less and less a place for detention, the admission and discharge procedures became more liberalized. The ideal situation would be that the mentally ill would enter voluntarily in the same way that patients suffering from other illnesses enter hospitals, and that their discharge is only regulated by psychiatric considerations and not by legal considerations. Great strides were made regarding the change which came about simultaneously as the open hospital was introduced and there is an intrinsic relationship to it. It shows that the open hospital is not an isolated phenomenon but a part of a fundamental change in attitude towards the mentally ill. In Great Britain about 90% or more of the patients are admitted voluntarily and I know of a hospital where only one patient is certi-

fied. In New York the percentage of voluntary patients rose from 4% to 34%, and there are some hospitals which now admit nearly one-half of their patients voluntarily or based on a certificate made out by one physician without channeling the admission of the patient through the courts. Commitment becomes more and more meaningless if the patients go to an open hospital and this will have to be reserved in the future only for patients who refuse to go even though they are in need of treatment, or for patients who for legal reasons are sent for psychiatric observations and evaluation. These are the patients who will have to be kept in closed wards in the hospitals. It is not impossible, however, that if the public attitude toward mental disease changes to such an extent that there would be no stigma attached to it, and that our treatment endeavors would become so effective, that our hospitals will be places to be desired to go to. The less legalistic our admission procedures are to the hospitals, the less resistance will be displayed toward the hospitals and I may say that of psychiatric treatment in general.

I have mentioned the relationship of the state hospitals to the community. A large reorganization of the mental health services is going on. This applies especially to Great Britain where these changes were effected due to the National Health Services, but such changes are also observable in many other countries and in the United States. This reorganization of the mental health services has several basic concepts in common. First, it was recognized that the mental hospital should not exist in isolation, but should be intimately connected with the psychiatric activities in the county around it and should participate in them. The second important consideration is that the psychiatric services should not depend only on state hospitals, but to some extent should be taken over by psychiatric divisions in general hospitals and the psychiatric clinics in the community. Many claim that such psychiatric services would be more effective than the type of services we have today be-

cause a comprehensive psychiatric service could be evolved which would permit a patient to be treated in the clinic if necessary, be transferred to a hospital for treatment, and if he improves sufficiently again to retransfer to the clinic for future treatment. It is also visualized that all these treatment facilities should be near the home of the patient so that he should not be removed from his family and familiar environment and sent away.

This has led to the idea of so-called neighborhood hospitals and neighborhood clinics. It is obvious that we will need many more community facilities for the treatment of the emotionally sick than before. Of course, this includes facilities not only for the major mental disorders, but also for persons who suffer from widespread psychoneurotic disturbances. At present our community facilities are inadequate. This is partly due to the fact that the number of emotionally ill persons in the community has been underestimated. Furthermore, maintaining extensive psychiatric services of this sort would also need extensive financial support. In addition, personnel shortages would make it very difficult to man the ever-spreading psychiatric facilities in the community without being able to increase the number of persons working in them. But I am sure that community facilities will be established and that in the future these facilities will be intimately linked with the state hospitals. However, I am also convinced that these changes can come about only in an evolutionary manner and cannot be solved by a revolution in this field. This can be achieved only by revolution if we should have a sudden breakthrough in etiological and therapeutic knowledge in the treatment of the major mental disorders which would then prevent their hospitalization.

I will discuss this in a short time when I mention research approaches where a great deal of promising work is going on, but policies will have to face the realities with which we must cope today.

In New York State we have a Community Mental Health program which now covers about 90% of the population. In some places the local services are fragmentary and in oth-

ers far better developed, but we still do not have psychiatric services which could be called truly comprehensive. A complete integration of such services would mean that the referral of the patient to a particular facility is determined by the patient's need rather than exigency of his disparate organization.

We are now setting up pilot projects to see how such an integrated program will work and to what extent patients can be kept out of the state hospitals or treated only for a short period. Even though we have had such organization in recent years, community services still fell short of meeting our actual needs. There are not nearly enough psychiatric clinics and psychiatric beds in general hospitals; they do not approach the number that is required. It also has to be stressed that in addition to the well known psychiatric disorders, more and more resources are needed to treat drug addiction, alcoholism, emotionally disturbed children, and adolescents, and at present virtually no community facilities exist to meet these rapidly mounting needs. Our therapeutic weapons are more effective than they were formerly. This is also a reason why we may treat many more

patients in the community than before, and probably because of the better therapeutic endeavors, the attitude of the community toward the emotionally ill is changing and they are more and more accepted on par with persons suffering from other illnesses. I mentioned before the connection, but I would like to repeat here that even though many more patients can be treated in a community setting, and probably with shorter hospitalizations than before, this does not mean that we do not need hospitals, or that a few small hospitals would be able to satisfy all the therapeutic needs which are in existence.

For a long time psychiatry was the step-child of medicine but it now compares favorably with all other branches of medical science.

It was a great honor and privilege to address you. If alive, Colonel Porter would have been proud of the progress psychiatry has made in the past years. He, with his knowledge, interest, and understanding was in the forefront of those who laid the foundation of contemporary psychiatry.



IMPORTANT SCIENTIFIC PAPERS WILL BE PRESENTED AT THE 67TH ANNUAL MEETING, OCTOBER 31-NOVEMBER 2. PLAN TO ATTEND.

Reflections on Hospital-Acquired Staphylococcal Infections

By

MAJOR JEROME H. GREENBERG, MC, U. S. Army*

IN RECENT years it has become more and more apparent that the staphylococcus is one of the worst offenders relative to antibiotic resistance and that this same organism, in part because of this very characteristic, has become the viper in our hospital bosom. Recognition of the staphylococcus as a serious problem in hospital infection has been slow to come about for several reasons. First, many of these infections only become apparent subsequent to hospitalization and are never associated causally with the hospital. Second, most hospitals are relatively uncoordinated aggregations of separate and distinct services and practices with little interchange of information beyond the individual patient level; there is little correlation of information concerning infections within the hospital.

Only since the initiation of special epidemiologic efforts and the organization of hospital infection committees which compile and coordinate the data, have we begun to recognize the magnitude of the problem. It has been reported, for example, that post-operative sepsis rates under 5 per cent are usually missed unless special records are kept.

There is no longer any question that there is a problem. In the years 1954 to 1958 some 500 outbreaks were reported in the United States as being due to staphylococcus of the epidemic type known as 80/81. While this particular type is the most notorious and the most frequent offender, it is nevertheless only one of many epidemic types.

Having recognized the problem does not automatically indicate that there is clear sailing ahead. In fact, many hospitals have failed to take even the initial steps required to discover that they too are disseminating

staphylococcal disease. They are like ostriches with their heads buried in the sand, the philosophy being that if you don't look for the problem, you won't find it, and if you don't find it, it doesn't exist.

Even where the hospital transmission of staphylococcal infections is an established fact, problems remain. Among these problems are the relative importance of hospital environment and carriers, and especially what to do about the latter. To arrive at solutions to these problems, we must first find and trace cases. Above all, information is necessary—and there must be an exchange of this information, within the hospital, between hospitals, and between the hospital and the health department or, in the military, the preventive medicine section.

Within the hospital, the infection committee is an excellent means of gathering data on infections and pathways of infection. Through either the hospital or the health department, or the preventive medicine section there should be a follow-up by questionnaire or telephone of discharged patients, all if possible, otherwise a representative sample. The follow-up should take place from one to four weeks after discharge. The incidence of pyoderma is recommended as a good index of infection.

Regardless of the system in effect, the health nurse in the course of her activities should be alert constantly for the occurrence of infection in households into which patients have recently returned following hospitalization. This information should be transmitted to the hospital infection committee or to the health department.

Once the existence of the problem is recognized, the magnitude of the problem determined and provisions established for continuing surveillance, intelligent efforts can be directed toward interrupting the chain of transmission. We can do more than merely saying "Let's tighten up our aseptic

* Assistant Chief, Communicable Disease Branch, Preventive Medicine Division, Office of The Surgeon General, Department of the Army, Washington 25, D.C.

technics." With specific information we can formulate specific control measures. For example, if epidemiological investigation reveals that "clean" linens are transmitting staphylococcal infection, we may subsequently find that faulty laundry technics, in which clean and dirty linens are handled with too great proximity, are responsible. Or the operating room may be the site of transmission and ventilating under positive pressure or changing the patient's clothing between the ward and the operating room may be the answer.

In mentioning the operating room, it should be pointed out that strain specificity of staphylococci is of much more importance in the nursery than in the operating room. We are interested in obtaining as high a degree of asepsis as possible in the latter, whereas in the nursery we will settle for eliminating or controlling the epidemic strains alone.

The relative importance of environment and carriers in the transmission of staphylococcal disease continues to be the subject of considerable debate. Undoubtedly, they are both important, the relative degree depending upon the particular time, place and situation. The carrier is actually a greater problem than the environment since control in the case of the latter is almost always possible subject only to the availability of time and/or funds. Control in the carrier, on the other hand, may be extremely difficult because of resistance to antibiotics by whatever route administered and because of the failure of other means of interrupting transmission. The decision frequently becomes one of whether or not to eliminate the carrier. This then poses an extremely difficult administrative problem. In the absence of supernumerary personnel, the removal of even one highly-specialized individual, particularly for the long periods necessary to accomplish elimination of epidemic staphylococci, may be crippling to the operation of that section of the hospital. The ingenuity of the hospital administrator is put to the test in this situation.

The Hospital Infection Committee has already been mentioned. The functions of

such a committee were enumerated during the Proceedings of the National Conference of September 1958 on Hospital-acquired Staphylococcal Disease, sponsored by the Communicable Disease Center of the Public Health Service and the National Research Council. These functions include:

1. Establishment of a system of reporting of infections.
2. Maintenance of records of infections.
3. Distinguishing between intramural and extramural infections.
4. Reviewing the hospital bacteriology service and providing for phage typing. Such typing is not necessary within each and every hospital, but should be readily available in the area.
5. Reviewing aseptic technics and making appropriate recommendations.
6. Reducing to the minimum essential the use of antibiotics and adrenocortical steroids.
7. Educating the entire hospital staff of the dangers of lesions and the importance of reporting such lesions.
8. Establishing technics for discovering post-discharge infections to include the tracing back of infections admitted to the hospital and periodic phone calls on a random sample of recently-discharged patients with a follow-up if necessary.

In summary, it can be said that data regarding epidemic staphylococcal infections is as yet inadequate and as a consequence the situation remains in flux. Although research on these infections is being conducted on a number of fronts, it is still insufficient. Those who must deal with the problem have an obligation to add whatever data and information they can muster. In the meantime, prevention or control must depend on the technics now at hand and on the education of all personnel in the importance of the problem and in the application of known technics.* Until a fool-proof method of control is found, if indeed such is possible, imagination and ingenuity must be applied in the use of such methods as are now available. There is as yet no school solution.

* Information on training and excellent training aids are available through the Communicable Disease Center, USPHS, Atlanta, Georgia.

Of Men, Medicine and Military Parachuting

By

CAPTAIN CHARLES A. ROCHE, MC, U. S. Army*

WITH the advent of a strong mobile fighting force concept in the United States Army today, many physicians are being faced with a hazardous type duty with an airborne unit. Concurrent with this assignment goes a practice of medicine that deals with the psychologic and physiologic functions of young men who are volunteers for this service.

Some background material is essential to fully appreciate the type problems that have been dealt with in the airborne medical service. By definition, the object of any airborne military group engaged in parachuting is to deliver the maximum number of fully equipped, psychologically prepared, physically fit, and combat ready soldiers from an aircraft in flight via parachute to the ground, intact and capable of performing their mission. The key word in the sentence is obviously "intact."

Military parachuting on a large scale is a rather recent innovation used extensively in the German campaigns prior to United States entry into World War II, and used by the United States in World War II as well as in isolated campaigns during the Korean War. With recent innovations of better parachutes and better aircraft, the rate of injuries has fallen. The variable factor in each instance is the individual. Decided efforts to eliminate this variable have become an institution with the airborne service. The program of conditioning young soldiers to develop reflex, mental and physical conditioning falls to the lot of the airborne school. The psychology behind this instruction is to seek out those who have not the physical stamina or mental attitude so necessary for this type duty.

The physical standards set are rarely com-

promised. The attrition rate is approximately 10%; interviews with candidates in training bear out their fears of height as being a predominant factor in termination; poor physical stamina and poor mental attitude run a far second. This is even before the initial jump from the aircraft.

After a two-week period of physical and mental conditioning, climaxed by a non-stop, five mile run, the young fledgling arrives at the important day—the first flight and exit from the aircraft. Few, if any, balk; but most admittedly are nervous beyond words. The body falls for approximately four seconds in space before the webbed static line hooked securely on the cable running the length of the aircraft jerks the back parachute pack open and finally severs the small cord separating aircraft from soldier. At this moment a spine tingling shock rents the body as the parachute is inflated. Occasionally some weak exits from the plane will cause the body to collide with the aircraft side due to the force of the air current eddies, commonly called the "Prop Blast" of large aircraft engines. Due to this force, occasional fractures and injuries of the rib cage and elbows are seen. The height of the aircraft is normally 1250 ft. in training. It flies at the rate of 120-130 mph. The wind velocity may vary from 0-20 knots per hour at jump altitude and 0-6 knots at ground level. These are the upper permissible velocities at which jumps are carried out. It usually takes approximately 50-60 seconds to descend at 18 ft. per second; all the while a constant hazard of entanglement of fellow parachutist is present. The most difficult maneuver of all to perform is a small roll on landing which is called a parachute landing fall (PLF). The five points of contact normally practiced in the PLF are the balls of the feet, calf muscle, thigh, buttocks and lateral back muscles. The direction of the roll is dictated by wind drift. Due to ground winds and irregular ground formation, a perfect PLF is impossible at times, thus injuries to ankles and knees are

The opinions expressed in this article are those of the author and are not to be construed as representing those of the Department of Defense or the Department of the Army.

* Division Surgeon, 101st Airborne Division, Fort Campbell, Kentucky.

possible. Occasionally a severe femoral fracture is encountered as are occasional cerebral concussions and vertebral compressions.

Other difficulties are encountered. Oscillation, as defined, is the exaggerated pendulum motion of the parachute which causes the parachutist to swing while descending, causing twisting on ground contact and subsequent injury. Inversions, partial openings, etc., all grouped together under malfunctions, represent partial failure of complete opening of the canopy, causing accelerated descent. This, of course, numerically increases the injury rate by virtue of increased impact. Malfunctions occur on the average of one per 1200. Severe ground winds drag chutes and soldiers along. Rarely are there fatalities, but in one ill-fated jump of 1958, five paratroopers lost their lives after having been dragged by a sudden ground swell. Tree landings also provide the physician with numerous cuts and bruises to treat. What has been written above represents the majority of trauma seen. Generally speaking, this elite group of officers and men are superbly conditioned toward many of the hazards of parachuting.

Injury statistics for the 101st Airborne Division representing hospitalization and time loss from duty are as follows:*

<i>Year</i>	<i>Jump</i>	<i>Injury</i>	<i>Injury Rate per 1,000 Jumps</i>
1956	61,649	278—3 fatalities	4.5
1957	89,325	189—1 fatality	2.1
1958	97,785	425—5 fatalities	4.3
1959	107,127	305—0 fatalities	4.7

Subtle disease is also uncovered at times in those troopers having greater than 100 jumps. Due to the innovation of more powerful aircraft engines, prolonged military aircraft flights have proven detrimental to high tone hearing; thus earplugs are in routine use by most paratroopers.

The remaining facet of interest to the physician is the psychiatric aspects. The majority of the troopers will be honest with their "Doctor" about their fears; the anxiety and tension become a normal part of their living. It is

true that the airborne service has more than its share of individuals interested in escapism and adventure, but for the most part the average airborne soldier maintains a more than stable attitude toward the training and jumping. Some love it with a passion and join a "Sky-Diving" organization in their off duty hours. (Sky-Diving is a recent innovation of falling great distances from an aircraft and performing various acrobatics before the individual activates his own chute.)

Men in the airborne service, though volunteers, may or may not continue service at their choice by merely resigning their parachute status. However, they are quickly transferred to a non airborne unit. The reasons for terminations of qualified men are varied. Most of them do not include fear of parachuting; most reasons include too rigorous a physical and military training program and too much so called "spit and polish soldiering."

The philosophies of airborne soldiering are hard and battle proven. The younger soldiers who have never heard a bullet fired in anger are more likely to survive the combat jump and the initial twenty-four hours of battle because not only are they vigorously physically trained but more psychologically prepared to survive. The airborne service is extremely young but steeped in tradition from two wars. These traditions are passed on today by those who are in the twilight years of their airborne service—the older NCO and officers. It is my opinion that a little rubs off on everyone who has had an airborne tour, even the most hardened non-conformist—even a physician.

The foregoing is presented as a general view of the many problems facing a physician assigned to an airborne unit. It is evident by accurate statistics that this is a hazardous service, all of which directly influences the lives of the men participating. Any medical-surgical problem encountered is therefore compounded psychologically. The stress and tensions are above normal, but the over-all training has thus far overcome most of these difficulties. It is hoped that one can better understand and anticipate the problems confronted by first understanding the background forces which create them.

* On record in the Safety Section, Fort Campbell, Kentucky.

Allied Officer Training at the U. S. Army Medical Service School

By

ROBERT O. BARNEY*

ONE of the strongest and most rewarding endeavors carried on by free-world nations in their quest for world peace is the defense system known as "mutual security." The United States and more than 40 Allied countries work together in this system which, in the words of President Eisenhower,¹ "has repeatedly played a major part in keeping free-world countries from losing their freedom."

From the beginning these nations have emphasized military exchange training in their effort to build collective security. A longtime contributor to this international training program is the U. S. Army Medical Service School (AMSS), Brooke Army Medical Center, located at Fort Sam Houston, Texas.

Every year since 1946 some student spaces at the Army Medical Service School (AMSS) have been allocated to officers from Allied countries. Fifty-one students from 17 countries are scheduled to attend AMSS during 1960. Since 1946 nearly 800 officers representing 41 countries (Table 1) have attended a course at AMSS.² One meaningful measure of the School's contribution to mutual security is that about 90 percent of these students came from countries allied with the United States in the Military Assistance Program set up by the Mutual Security Act of 1954. This act authorizes training of selected Allied students in Army and other U. S. service schools.

TYPES OF TRAINING

The Army Medical Service School conducts three types of training for Allied military personnel. The first type is formal

training for instructors and others in regular courses. The second type is orientation visits for senior officers, the third is observer training. This article concentrates on the first type—the formal training afforded Allied officers by regular resident courses of instruction. In addition to officers, AMSS sometimes has a few enlisted students from Allied nations.

The principal courses at AMSS which Allied students attend are the Army Medical Service Corps officer basic course, the Army Medical Service officer advanced course, and the Hospital Administration course. Among other courses which regularly attract Allied students, but in smaller numbers, are management of mass casualties, military nursing, medical supply, and preventive medicine.

MISSIONS OF ALLIED TRAINING

The AMSS program for Allied students has three main missions. The primary one is to see that they get maximum benefit from the instruction in courses they attend. The second mission of the program is to enable the students to increase their knowledge of the United States and its objectives, people, and way of life. The third mission is to afford the students opportunity to acquaint fellow students and civilian associates with the Allied countries they represent.

To work toward the academic mission, AMSS gives Allied students a special pre-course orientation as well as regular courses of instruction. In addition, to enable the students to concentrate on studies, staff members of the Officer Student Detachment and its Allied Officer Section aid them in solving certain personal problems. The other missions are accomplished through daily contacts between students, social functions at the School, and extracurricular activities arranged by the School.

* Publications Writer, Office of Doctrine and Training Literature, U. S. Army Medical Service School, Brooke Army Medical Center, Fort Sam Houston, Texas.

TABLE 1
FOREIGN NATIONS REPRESENTED BY AMSS STUDENTS, 1946–MARCH 1960

Argentina	Egypt	Japan	Peru
Belgium	Ethiopia	Jordan	Philippines
Brazil	Germany	Korea	Portugal
Burma	Greece	Lebanon	Spain
Cambodia	Guatemala	Mexico	Thailand
Canada	Honduras	Nationalist China	Turkey
Chile	Indonesia	Netherlands	United Kingdom
Colombia	Iran	Nicaragua	Venezuela
Cuba	Israel	Norway	Viet Nam
Dominican Republic	Italy	Pakistan	Yugoslavia
Ecuador			

PRECOURSE ORIENTATION

Allied students attend the same courses as United States students. This means that, to benefit fully from instruction, they must be able to understand English and must have a working knowledge of United States military doctrines.

To develop their ability to understand and absorb academic instruction, Allied students go through an orientation before starting a regular course. The orientation lasts 5 days and includes classroom instruction and escorted tours of local military posts, hospitals, and historical sites. Among the subjects covered by lectures are basic English, U. S. Army terminology, organization and functions of U. S. Army Medical Service, military courtesy and customs, map reading, U. S. Army school system, and sanitation. The students also hear lectures on such diverse subjects as the United States monetary system, American social customs, governmental organizations and functions, traffic laws, religious affairs, political parties, current events, news media, and the history of Texas, San Antonio, and Fort Sam Houston. Other useful information is furnished in a guidebook prepared especially for Allied students.

COURSE FOR NON-ENGLISH SPEAKING STUDENTS

As a rule, precourse orientation is the only special instruction conducted for Allied students at AMSS. A novel exception to routine occurred in 1957 when the School

conducted a course for non-English speaking officers of the Nationalist Chinese (Taiwan) Army.

Setting up and teaching this unique course posed several problems new to AMSS faculty and staff. However, the problems were solved, thanks to assistance from officials of the Taiwan government and Army, particularly a team of officers who served as interpreters.

A 15 weeks' program of instruction was prepared. Although similar in some ways to a regular course of U. S. Army Medical Service officers of field grade, the new course stressed subjects of most interest to the Chinese. Also, the new course taught more about principles or doctrines and less about details than a regular course.

Training texts and handouts for students were translated into Chinese. English wording on slide films and other visual training aids was replaced by Chinese wording. English sound tracks were removed from training films and replaced by commentaries spoken in Chinese. Instructors lectured in English. Then, interpreters repeated their statements in Chinese to the students.

The course was given twice during 1957. It was considered a success by both AMSS and Nationalist Chinese officials. After the first few days of instruction, students absorbed the subject matter rapidly. All who started the course completed it; none failed it. In addition to this course, the School gave the students instruction in conversational English. As a result, more than one-half of

them had a fairly useful knowledge of English when they left the School.

SOCIAL AND OTHER ACTIVITIES

Through daily contacts with fellow students and at AMSS social functions, Allied students build friendships with and learn the traits of United States officers. At the same time, the United States officers get to know the Allied officers and learn about their countries.

The School and civic organizations collaborate to take Allied students into social functions carried on by the civilian community of San Antonio. The students are frequent guests of individual families and of churches, schools, universities, and such groups as Rotary, Lions, and Kiwanis clubs. They often give talks on their countries to local civilian groups. To learn about other aspects of American life, these students visit civilian research organizations, hospitals, and industrial concerns of special interest to them, such as dairies, packing houses and other food processing plants.

A leading role in organizing off-post activities for Allied students is taken by the San Antonio Council of International Relations. The council sponsors numerous functions for the students. One of the most memorable for many students is a ceremony which is held at the completion of their training. At that time, representatives of the Council of International Relations and the government of Bexar County present each Allied student with a certificate of honorary Texas "citizenship" and a miniature Texas flag.

CONCLUSION

The training of Allied officers at the Army Medical Service School is an enterprise which, in the best meaning of mutual security, combines the efforts of men and

women from the armies of virtually all free-world countries.

Benefits of the training are varied and far-reaching.

First, there is the fact that nearly 800 officers from the medical services of Allied armies have become skilled in techniques and doctrines of modern military medicine. Application of this knowledge certainly can be expected to increase the effectiveness of Allied military medical services.

The number of students trained is not the only way to measure the importance of Allied officer training. This program is but the first stage of a training process that continues long after Allied officers have completed courses at the School. When they go back to their countries to instruct training personnel, who in turn train personnel of units, the beneficial results are multiplied many times over.

Also, when these officers return home, they are called upon to tell others of their experience in the United States. In such discussions they do much to promote understanding and appreciation of the American people's democratic ideals and ability to resist aggression.

Equally important is that this training helps fellow United States students and civilian associates to a better appreciation of the capabilities of Allied officers and the objectives and problems of their countries.

Thus, by contributions to mutual understanding as well as military efficiency, Allied officer training is building mutual security.

REFERENCES

¹ Eisenhower, Dwight D.: "Security and Peace," *Vital Speeches of the Day*, 24: 322, March 1958.

² Academic Records Branch, Office of Educational Services, Army Medical Service School, Brooke Army Medical Center, Fort Sam Houston, Texas.

The Influenza Epidemic of 1918

Personal Experience of a Medical Officer in World War I

By

COLONEL ROBERT H. IVY, MC, U. S. Army Reserve, Retired

IN SEPTEMBER, 1918, I had been ordered to overseas duty in France, and being a Major, was placed in charge of a group of ten casual medical officers, all First Lieutenants, for administrative purposes designated "Surgical Unit No. 1." After two weeks' preliminary training at Camp Crane, Allentown, Pa., we were scheduled to embark at Hoboken on the evening of September 22, 1918, on the transport *Wilhelmina*, a small 5000 ton ship, formerly of Dutch registry, with accommodations for about 2000 troops. With the rank of Major, it happened that I was the senior medical officer on board, and consequently, was appointed Surgeon to the troops.

Before sailing, my first duty was to determine the state of health of every soldier boarding the vessel. Each one that night after coming aboard was given a physical examination and those with temperature over 99°, or cough or sore throat were put off the ship and not permitted to go with us. This procedure I believe prevented what could have been a much more serious outbreak of influenza on board than actually turned out to be the case. This disease later created much havoc among civilians in the United States. In spite of the screening process, a considerable number of men developed the "flu" during the voyage and there were 14 deaths on board the *Wilhelmina* alone. Our ship was more fortunate than some of the others in the convoy of ten. On the *President Grant*, a larger ship than ours, we counted at least 20 bodies being buried at sea, owing to a shortage of coffins.

The Troop Commander on our ship appointed a Board of Officers with me as Chairman, "for the purpose of investigation of the causes of the extraordinary number of sick cases on board from severe colds, grippe and pneumonia. It will be the duty of this Board

at investigation to seek and report information as to the origin of the above cases of sickness with the end in view of recommendation that would make it possible to avoid deaths and serious illness which may result from such originating conditions in the future. A complete report of the investigation together with three copies of signed statements from witnesses who were called before the board to give testimony will be made to Commanding Officer Troops for transmission to the Base Commander, Port of Debarkation."

The following report of the investigation of the board was made:

From: The Surgeon, U. S. Troops aboard
U.S.S. *Wilhelmina*.
To: The Surgeon, Port of Embarkation,
Hoboken, N.J.
Subject: Influenza.

1. In accordance with request made in letter, I report the following facts in connection with the epidemic of influenza occurring aboard U. S. Transport *Wilhelmina*, on voyage from Hoboken, N.J., beginning September 22, 1918:

The personnel on board was divided as follows:

Navy officers	39
Navy crew	296
Total	335
Army officers	89
YMCA Sec.	1
Troops	1984
Total	2074
Navy	335
Army	2074
Grand Total	2409

Causes: The following facts are regarded as having a direct bearing upon the cause of the epidemic:

Service records show that the great majority of the men of all the troop organizations had not been in the service longer than three months, and many of the sick cases under two months, i.e., they were unseasoned troops.

All of the organizations for several days prior to arrival at the Port of Embarkation had been subjected to severe exposure to wet and cold and lack of rest and sleep. During their stay of from one to three days at Camp Merritt, the troops were quartered in unheated buildings, during a spell of cold rainy weather, and underwent numerous inspections which greatly interfered with rest and sleep. Most of the troops marched in the small hours of the morning from Camp Merritt to Alpine Landing, and owing to delay in departure of the ferry boat, had to sit on their packs or stand on the wet ground for about three hours. During the trip down the river many of them were exposed to a cold wind. Upon arrival at the pier at Hoboken the men had to stand in full equipment for from one to four hours before embarking on the transport. They were served with hot coffee and rolls on the pier at about 9 A.M. by the Red Cross, this being their only food between leaving Camp Merritt and dinner on the transport.

No evidence could be found that the troops had been exposed either at their original mobilization camps, en route, or at Camp Merritt, to any epidemic of influenza.

General outline of the epidemic. During the evening of September 22, cases of influenza began to be reported rapidly from practically all organizations aboard the ship, and before sailing time at 11 A.M. on September 23, 52 cases had been transferred from the ship to Embarkation Hospital No. 1. All cases at that time seemed to have been removed, and shortly before the time set for sailing the Fleet Surgeon came aboard and decided that sailing of the ship need not be delayed on account of the sickness.

On the afternoon of September 23 and for the next several days new cases were reported in increasing numbers, until Sept. 30, when a gradual decline began.

Owing to the overwhelming number of cases appearing in all compartments of the ship it was not possible to carry out quarantine measures. The large number of cases made it necessary to transfer only those more seriously ill to the care of the Naval Surgeon in the sick bay, the latter having accommodation for only 24 patients. An arbitrary rule was established to transfer those having a temperature of 101° or over to the sick bay and to keep all others with lower temperatures in quarters under the care of Army medical officers assigned to each compartment. As soon as possible after that part of A deck was cleared of troops quartered there and placed at the disposal of the Naval Surgeon to accommodate the overflow of patients from the

sick bay. As the number of new cases decreased, and recoveries occurred, accommodations could be found in the sick bay and on deck for even the milder cases.

In all, it is estimated that 65% of all cases were transferred to the Naval Surgeon for treatment. The total number so transferred was 238. Among the naval personnel 45 cases developed. Roughly estimating the number of milder cases treated in quarters at 130, and adding the 52 transferred ashore before sailing the total would be 465, or about 20% of the total personnel on board. There were 14 deaths (Army 13, Navy 1) aboard the ship, all from pneumonia. 57 men remained sick at the end of the voyage and were transferred to the hospital at the Port of Debarkation. Several of these men were not expected to recover.

Symptoms. Practically all cases were of the respiratory type. The men almost universally complained of headache, pains in back, arms, legs and bones, sore throat, tightness in chest, and cough. Epistaxis was frequent. A mild pectechial rash was sometimes seen on the forehead. Constipation was common, but other gastrointestinal symptoms were not often noted. The initial temperature ranged from 99° to 106°, the average being about 102°. The duration of the disease in average cases was five or six days.

Complications. The commonest complication was bronchopneumonia, which developed frankly in 36 cases, though the symptoms in many of the cases transferred ashore at the end of the voyage gave rise to the belief that this number would be increased to at least 55. In several of the pneumonia cases the temperature descended by crisis, which was not accompanied by decrease in the respirations. Several of the patients had copious pulmonary hemorrhages. There was one case of acute purulent otitis media.

Mortality. There were 14 deaths (1 Navy, 13 Army) up to the time of debarkation, all from pneumonia.

Treatment. Treatment of all serious cases was under the supervision of the Naval Medical Officers. It consisted in placing the patient in the open air where practicable, relief of constipation, phenacetin, aspirin and salol for pain, codeine and Brown mixture for cough, and stimulation by whisky and strychnine where indicated.

As stated before, since every compartment in the ship was involved, measures of isolation of contacts and disinfection of quarters were not practicable during the voyage.

The efficient handling of the epidemic and skillful care of the sick by the Navy Medical officers was highly commendable.

2. By order of the Troop Commander, a Board of investigation consisting of the undersigned and the Commanding Officers of the various Troop Units on board was appointed to investigate the causes of the epidemic. A report has been transmitted to the Base Commander, Port of Debarkation.

(signed) Robert H. Ivy
Major, M.C.

This report is reproduced here in full, as it affords a good idea of the urgent need for troops to carry on the last few months of the fighting in France. The situation was so critical, that practically no time could be spared for training and seasoning of replacements, and many of the men who had just been inducted into the service were rushed to the Front as rapidly as possible. As a matter of fact, I later saw one or two soldiers who had sailed to France on our transport late in September, in hospital with wounds sustained before the November 11 Armistice.

A sequel to this experience on the transport *Wilhelmina* occurred after debarkation at St. Nazaire, France, on a dreary, rainy afternoon, October 6, 1918. We were all ordered to proceed immediately to Debarkation Camp #1, about three miles out of town. Most of the troops from the convoy, perhaps 15,000 in all, had to march to this camp that evening. Many of these boys were ill from the flu and some of them fell by the wayside, leaving their abandoned arms and other equipment

strewn all over the place. On arrival at Camp #1, ahead of most of the troops, our Unit of 11 casual medical officers reported to the Camp Commander, Colonel Kemp, from Philadelphia, formerly of the 28th Division, and were assigned to a large barn-like structure for sleeping quarters. There were no beds, so our sleeping bags came in handy, on the floor. We had no sooner made ourselves comfortable for the night than we were aroused by the stentorian tones of Colonel Kemp, shouting "All casual medical officers up to treat the flu." By this time many of the troops from the transports had arrived, with large numbers of men in various stages of the epidemic, overwhelming the regular hospital facilities of the camp. Colonel Kemp acted in this emergency with the most creditable efficiency. He turned the large Y.M.C.A. hut into a temporary hospital, manned by our Unit, and soon it was filled with the less seriously ill men. One excellent thing that Colonel Kemp did was to have prepared many 20 gallon cans of hot coffee, to be served to all troops on arrival at camp. I believe this was one of the chief factors in restricting the extent of the disease. With plenty of hot coffee, warm blankets, aspirin and some spiritus frumenti, most of our patients recovered in a few days.

104 Dalton Road
Paoli, Pa.



Making a Will*

By

MAJOR CLIFFORD M. ROTH, JAGC, U. S. Army

BEING a firm realist who deals with life and death and the legal problems attached to both, the Army Judge Advocate General recently cast a trained eye on the matter of making wills, and learned that only 57 percent of officers and 21 percent of enlisted personnel of the U. S. Army have made wills. Consequently The Judge Advocate General is urging that all Army personnel consider the importance of having a properly prepared will.

In essence, a will is a person's declaration of what is to be done after his death. Usually it relates to the disposition of one's property.

With a will the maker can predetermine, subject to legal limitations, what disposition should be made of his property after his death. He can also name the party whom he wishes to entrust with the task of carrying out his wishes—*i.e.*, an Executor in legal terms. If he desires, he may also name some other person or organization as a Guardian of the person and property of minor children.

Such a document obviously is operative for no purpose until after the maker's death, and it becomes applicable to the situation which exists at his death. However, it can be changed during his lifetime as conditions may change. Such conditions, for example, might be divorce or death of the spouse, or of any children named in the will.

YOUR WORLDLY ESTATE

A will is a projection of man's normal desire to provide for his family. Yet many either put it off until too late, or simply refuse to consider the need for it at all.

* This article originally appeared in the Army Information Digest, Vol. 15, June 1960 and is reproduced here by permission. The editor of MILITARY MEDICINE believes this article will be of interest to all readers, not only to those in the U. S. Army.

Many men neglect making a will because they do not feel they have accumulated sufficient of the world's goods. (After all, nobody enters the Army with expectation of getting rich.) Yet acquisition of money and property is not abrogated by military service. Everybody with a family has some worldly goods; some have made wise investments; some have acquired or inherited property; others have insurance programs; and even if none of these has been accomplished there is the matter of death gratuities and Veterans Administration and Social Security income for minor children that should be considered. Consequently making a will is important to every individual.

A will may be a simple document, drawn up by the individual and signed in the presence of witnesses who should affix their names. Yet if there is considerable property or if the family situation may demand it, the will of necessity may be more complicated. A person drawing up a will should have legal assistance, to make certain that the document exactly expresses the wishes of the maker. Sometimes, too, a will may reduce the amount of court costs and other fees required in the probate of an estate—but this should not be a major consideration since in some states probating an estate with a will may be just as costly.

Obviously the terms of the will vary with each individual, his family circumstances, his desires and the needs of the possible survivors. To advise and assist the individual, Legal Assistance Officers are available at most Army posts. All Trust Companies and most banks have officials who will be glad to assist.

AS THE LAW PROVIDES

What happens to an estate if there is no will?

In such cases the property will be distrib-

uted to the decedent's relatives in accordance with the laws of the state of which he or she is a legal resident. These laws also prescribe the formula for naming an Administrator. The court-appointed Administrator of an estate is distinguished from an Executor who may be named by the person making the will. The laws also prescribe for appointing a Guardian for minor children.

Frequently under such circumstances the family may not be provided for as the individual may have wished. Even further, the disposition of real property and bank accounts or other goods may be tied up for many years because the property is partially owned by children. In such instances the surviving spouse is faced with the situation of being virtually unable to touch any part of the estate without a court order.

In preparation of a will, most men quite naturally designate the wife as the sole beneficiary and Executrix, taking it for granted that she will handle the estate and look after the welfare of the children. Yet it may happen that both husband and wife die together, or the wife does not long survive the husband. Such a situation raises the question of guardianship of the minor children. This can result in long and costly litigation among relatives over custody of the children. The wise serviceman will provide for such a situation by carefully stating his wishes in the will.

It is also an excellent idea for the individual to consider having his wife draw up a will when he does. This is especially desirable when the wife may have property in her own right. It also is advisable for each spouse to have a will with fairly similar provisions for caring for the children in case of death of both parents.

Selecting an Executor and/or Guardian is a matter of major importance. Many states require that they be residents of the state in which the will is to be probated, or in which the guardianship is to be established. Rules vary considerably between States, and there are many qualifications and modifications.

This should be carefully considered, since if under the State law the Executor or Guardian cannot qualify, the courts must appoint an Administrator—who may be a stranger or even somebody objectionable to the maker of the will. However such action normally will not affect the other provisions of the will.

Usually most men provide for children to live with a close relative in case of death of the wife. While such relatives may be excellent as far as guardianship of the "person" is concerned, they may be totally lacking in qualifications for managing the estate. Consequently the person making a will should understand the difference between a Guardian and a Trustee. He may desire to name some relative to act as Guardian of the children and some other person or agent to act as Trustee of the estate.

ADMINISTERING THE ESTATE

While many servicemen may feel that they have not sufficient property to warrant making a will, yet there usually will be more to an estate than is commonly realized. Besides the value of insurance and other property, it should always be remembered that in the event a serviceman dies on active duty, there will be income from the Veterans Administration and Social Security Administration. Therefore where minor children are concerned, the serviceman should make a will designating the person who will raise the children, the person best qualified to supervise the preservation and use of the property, and stipulating when that property is to be turned over to the children without restriction.

As an example, in the case of two minor children surviving, there would be an income of about \$100 per month from the Veterans Administration and another \$100 to \$125 per month from the Social Security Administration. The amounts diminish when the youngest child reaches age 18, but the Veterans Administration will continue certain payments until age 21 if the child is in school. Special provisions also exist for dis-

abled children beyond this age. This income usually will be ample for the children until they reach college age. Usually the Guardian will not have to use the funds left by the deceased parent or parents; and the problem therefore is to preserve the estate for a number of years.

In normal instances, where sufficient income may be anticipated to carry the children through the years until they enter college or are able to provide for themselves, the individual may desire largely to conserve the remainder of his estate. On the other hand, if conditions permit, he may desire that a liberal investment policy be pursued in order to increase the size of the estate and provide as much as possible for the children when they come of age.

According to one's preference, the property may be placed in control of either a Guardian or a Trustee. Essentially it can be said that a Guardian is required by law to be extremely conservative, whereas a Trustee may be less so, providing he is not reckless or lacking in prudence.

Since management of large sums may prove difficult for an untrained person, most states have strict laws controlling the activities of Guardians rigidly restricting investments and expenditures and calling for annual reports. Accordingly, most guardians, of necessity, find it expedient to invest the property in U. S. Government bonds or other conservative securities. No one can dispute the safety of such investment, and whether the guardianship exists for a short or a long time, the fund will remain intact and will also earn a small amount of interest.

As an alternative—always considering the elements of risk attached—the individual may be willing to permit funds to be invested with the expectation of growth. This may most easily be achieved by use of a testamentary trust with a professional Trustee such as a bank or trust company. This is less costly than most persons realize, since most large trust companies charge an annual commission of only \$5 per \$1,000 on the first \$50,000, \$2.50 per thousand on the next

\$450,000 and \$2 per thousand on all over \$500,000. In addition, a trustee collecting rents and managing real property is allowed a management commission of 6 per cent of the gross rents collected. When the principal of the estate is paid out by the trustee, he is entitled to a fee of 1 per cent.

Even though the estate may not be large enough to consider use of a Trustee, it may still be an excellent move to name a trust company or bank or lawyer as Guardian of the property of the minor children, while a close relative or friend acts as Guardian of the person.

ASSISTANCE AVAILABLE

Any serviceman can consult with a Legal Assistance Officer who will advise him of the type of will he needs and either prepare the will or refer him to a specialist if the estate is large. But in any case the serviceman must be prepared to spend sufficient time with the attorney and give him full details so that he can draw up a will that is best for him and his family.

The serviceman should examine his will about every two years to determine if any changes are advisable. Changing a will should be considered in the event of change of domicile, birth or death of children, divorce or death of spouse or guardian.

Sometimes the answers to all problems cannot be quickly resolved and as a result making a will is put off for many months. From a practical standpoint, it is better to draft a will even though it does not cover all contingencies. An incomplete will is certainly better than no will at all.

In substance, making a proper will calls for a sensible plan in accordance with the testator's wishes and his family needs and, in sizeable estates, due attention to the tax consequences. It calls for full consideration of contingencies which may occur after execution of the will and which may be guarded against by apt and proper provisions. It requires strict compliance with legal rules and, above all, it demands clarity and certainty of expression.

What Price Hospitalization?

By

LT. COLONEL THOMAS E. BAKER, MSC, U. S. Army*

THE nation's hospital bill, in 1958, totalled seven billion dollars. This sum seems staggering until we consider that the public spent more than this amount for cigarettes. Furthermore, economists predict that our gross national product will exceed 500 billion dollars in 1960. If so, then the hospitals will be receiving less than two percent of the nation's earned wealth. One fact is certain; as our population increases and our standard of living improves even more, the trend in total hospital costs will continue to rise each year for a long time to come.

The rising cost of hospitalization is comprehensively reported by the statistical services of the American Hospital Association and published in the organization's annual report (*Hospitals*, J.A.M.A., Part two, Aug. 1, 1959). This report provides hospital administrators with a fruitful area for further study. It has a special significance to the military hospital administrator inasmuch as the Army Medical Service in the continental United States participated in the survey. Reports were also received from Air Force and Navy hospitals, thus establishing a basis for comparison.

The data summary is compiled from responses to 6,981 questionnaires which were sent to every licensed hospital in the United States and to all federal, state, county and city hospitals, as well. Since more than 98 percent of the hospitals responded, the report represents an almost complete statement of the nation's hospital resources. This is the thirteenth year in which the American Hospital Association has compiled the report, thus advantage of experience in working with this type of data collection is ap-

parent. It is also notable that most hospitals have improved reporting methods and statistical procedures, with many of them using automatic equipment, thereby greatly increasing the reliability of this report.

A review of the report leads to the inescapable conclusion that hospital costs have increased and will increase further. Total hospital expenditures, excluding cost of new construction and expansion, have more than doubled since 1948. The increasing demand for more hospital beds together with an increasing use of hospitals by people covered by various insurance plans mirrors America's growing population. There are now about 9.7 beds for every thousand people in the United States. Beds in our short-term voluntary hospitals are increasing at the rate of three percent each year.

Since hospitals provide personal service, it is not surprising that personnel costs account for the largest part of every dollar spent. Payrolls in 1958 amounted to more than \$4½ billion—some 65 percent of the total costs. These personnel costs do not include salaries paid to interns, residents, students, nor do they account for the doctors' fees. Hospital payrolls have risen 150 percent in the United States in the past decade, and this far exceeds the percentage increases in other phases of hospital costs. Hospital workers have shared in the general wage raises of other occupations, but they have been granted proportionately greater increases than most of labor because they lagged far behind the semi-skilled in industry in take-home pay. Meanwhile, the working hours of employees in hospitals have decreased and are now close to the national work-week of forty hours. As working hours are shortened it becomes necessary to increase the working force. Also, in recent years the number of part-time and volunteer workers has been on the decrease and replacements have been made full-time, paid

* Assistant Comptroller, Hq. 549th Hospital Center, APO 403, New York, N.Y. This article has been reproduced with permission from *Medical Bulletin*, U. S. Army, Europe, Vol. 17, February 1960.

employees. This factor increases costs and staffing ratios. Hospital workers are becoming increasingly susceptible to unionization and as this development accelerates there will be more wage demands made upon management. The recent strike in New York City is an example of union efforts to reduce hours of work and raise salaries.

Costs generated in our federal hospitals are of special interest to persons concerned with military hospital administration. The Bureau of the Budget maintains a watchful eye over the entire system. In making its recommendations for apportionment of the national budget, the Bureau carefully reviews cost data, programs and workloads reported by the various government agencies.

Cost comparisons are admittedly difficult to make because of the dynamic characteristics of the hospital universe. Factors such as geographic location, physical plant and layout, type of treatment given, age and sex of patients, type of equipment available, quality of staff, standards of care and many others are readily recognized by the hospital administrator but often escape consideration by the statistician who subjects the total entry to mathematical scrutiny. While admitting that there are preponderant difference factors, administrators are still faced with the cold fact that the dollar is the common denominator by which programs are priced and workload is costed.

Federal hospitals cost the taxpayers \$479 million, just ten years ago. In 1958, the people paid over a billion dollars to support the system. The total number of beds in the system in 1958 was 181,000 or 4,000 less than reported in 1948, but there were 439 hospitals reportedly against only 386 in 1948. Admissions had increased nearly 20 percent during the period and the occupancy rate of 87 percent was at its highest. These factors contribute to a reduced length of patient stay.

The improved and extended services that hospitals now provide, plus more intensive care and increasing professional knowledge, make it possible for most patients to be

discharged from the hospital much earlier than was once possible. This saves the patient money because the total bill is reduced even though the daily cost is greater. Also, the patient may return to work sooner. Provision of this kind of service and specialized treatment, however, requires more people and more equipment. In 1958 the federal hospitals reported an average staffing ratio of 116 persons for every 100 occupied beds, whereas, in 1948 only 103 persons were required for 100 occupied beds.

The increase in births is also shown within the federal hospital system and apparently the military establishment is accounting for most of this additional workload. In 1948 there were 49,000 births reported but in 1958 the federal hospital delivered a bumper crop of 96,000 newborn.

How does the Army Medical Service compare with the other federal hospitals, and more specifically, with the hospitals of the Air Force and the Navy? The Army's average patient day costs are considerably higher than for other hospitals in the system, both military and civilian. The Army reported \$33.34 per patient day whereas the federal average was claimed to be only \$18.38. Both the Air Force and the Navy were higher than this average, but still below the Army's cost figure. The Air Force total expenditures averaged \$26.95 per patient day and the Navy reported \$19.22 as its unit cost. There are certain refinements still to be made in reporting patient day costs in hospitals and it is likely that factors inherent in the Army's military mission negate any chance for a favorable or fair comparison with civilian institutions.

Before any quick conclusions are drawn from the foregoing figures, however, certain workloads should be examined. The Army admitted 313,000 patients on a base of 13,581 operating beds. The Navy reported 15,818 beds, yet only admitted 186,000 patients during the same period. Based on these figures, the Army reflected 23 admissions for each available bed during the year, whereas the Navy had only 12 admissions against each bed. The Air Force

made a favorable showing on this basis, reporting 294,000 admissions with a base of only 9,150 beds, or 21 admissions per each established bed.

An entirely different comparison results if costs are computed on a case basis rather than average patient day costs. By dividing the total patient days per annum by admissions we find that the Army averaged 12.2 days per case, the Navy stay was 23.1 days, and the Air Force was lowest with 8.0 days. This was to be expected since the Army and Navy both included a number of large, highly specialized treatment facilities which treat relatively long term cases. Multiplying the average patient day cost for each case shows the Navy with a cost of \$455 per case compared to the Army's cost of \$405. The Air Force is, understandably, low with a case cost of approximately \$220 since its long-term cases are generally cared for in the Army's specialized facilities.

Outpatient care today represents probably the busiest function in any of our military hospitals. According to the 1958 report, Army hospitals had 5,910,000 outpatient visits, exceeded only by the Air Force which tallied 6,400,000 visits. The Navy fell far below, reporting only 1,860,000 visits to its hospitals. Current cost accounting procedures must be further refined to eliminate a certain amount of subjectivity in prorating costs between outpatient and inpatient services. There is still a tendency to weigh heavier in favor of inpatient costs.

A review of the American Hospital Association's report indicates upward trends in beds, staffing and costs and suggests new and challenging problems to be faced in the next decade. Many new hospitals will be opened and there will be a greater need for more highly competent managers to cope with the business aspects.

The work force in hospitals will increase.

In 1958 there were about one and one-half million employees on record. There will probably be general wage increases for hospital workers, perhaps as much as five percent per annum, for several more years to come. Despite the salary gains made by hospital employees, generally, there are still many skills that are underpaid when compared to industry. It seems certain that hospitals will have to pay more for scientific and technical skills if they are going to compete for quality in an increasingly tight labor market.

New equipment and new techniques will continue to impose higher costs and must inevitably be added to the patient's hospital bill. The development of complex techniques in cardiac surgery, for example, while a boon to mankind, will cost hospitals heavily in terms of increases in staff and expensive new equipment.

The hospitals must begin now to educate the public to these hard facts and to dispel any misconceptions that a profit motive is the dominant consideration in the rising costs of hospitalization in the United States. The American people constitute a most affluent society. They can surely afford to pay at least two percent of the national wealth for hospital care. Administrators need not apologize for these increasing costs as long as they continue to make a conscientious effort to operate their business efficiently. The competition inherent in a free enterprise system such as ours is probably our strongest assurance that hospitals will provide the highest standards of care at a cost that is consistent with the general economy. The public should be assured that this is so and that improved hospital care is reflected in the greater longevity our people enjoy. The good health that stems from superb professional care in the finest of facilities warrants this increased cost.

EDITORIALS

Armed Forces Voters Day

THE Secretary of Defense has designated September 27 as *Armed Forces Voters Day*.

Voting is not only a privilege but an obligation of citizenship. To the citizen of the United States the right to cast a vote in the privacy of a voting booth, or in the guarded security of an absent voter's ballot is one of the greatest privileges he has. This should not be looked upon lightly; it should be considered an obligation, and the right should be exercised at every election.

We tend to believe that the majority of our people put a candidate into an office, but that is not necessarily true. An organized minority can and frequently do control an election if only a small percentage of all the eligible people exercise the right of franchise. What right have we, then, to complain if we have been among those who have not voted? We have neglected our duty as a citizen and should have a finger pointed at us for being a poor citizen.

The Department of Defense is rightly concerned in this obligation of citizenship. Every effort has been made to spread the information at home and abroad so timely action can be taken by all eligible individuals to cast their ballots in the November 8 election. Each State has its own laws regarding registration, absent voters ballots, and presence at the polls. Voting officers at every level of command in the Armed Forces are obligated to disseminate the information. It is then up to each individual to act on that information and to see that his ballot is in the hands of proper authorities at the proper time so his ballot can be counted.

Americans, act on this privilege and obligation! Be informed; vote as your informed mind directs you. *Vote*.

Then do not stop being concerned about your government after your vote is cast. Be informed all along the line, from the local through the state and in federal government matters. An informed public makes America a strong nation. Let your opinions be known as a private citizen. Let those opinions be known to those who have been elected to represent you as part of a great nation. Do not expect that your opinions are always the best and latest word on a subject. You can not always be right any more than the other fellow can always be wrong. But at any rate you have expressed an opinion as is the right of an American citizen. If you are ready to express those opinions be as ready to cast your vote. Let us not side step this great obligation of an American. VOTE!

Neurosurgery in World War II*

THE second volume of the *History of Neurosurgery* in the U. S. Army Medical Department in World War II completes the account of neurosurgery with a detailed treatment of two subjects: injuries of the spinal cord and peripheral nerves. Like its companion volume, *Neurosurgery II* is edited by two distinguished neurosurgeons, Dr. R. Glen Spurling and Dr. Barnes Woodhall. Consisting of twenty-three chapters, extensive appendixes, an in-

* *Surgery in World War II. Neurosurgery*, Volume II. Medical Department, U. S. Army in World War II. Editor-in-Chief, Colonel John Boyd Coates, Jr., MC, USA; Editors for Neurosurgery, R. Glen Spurling, M.D., and Barnes Woodhall, M.D. Associate Editor, Elizabeth M. McFetridge, M.A. 705 pages, illustrations and color plates. Superintendent of Documents, Government Printing Office, Washington 25, D.C. Price \$7.00.

dex, many illustrations and color plates, this book is a rich 705-page compendium of recorded experience and a tribute to the skill and willing effort of the 20 contributing authors. It is most unusual to find the personal experiences of so many competent leaders bound between the covers of one text. The result is reflected in this outstanding permanent record of their work.

If war must come again, is it too much to hope that the trials, errors, and successes spread frankly in these two volumes will not be lost on that generation of neurosurgeons who must meet the next emergency? We hope that these books, along with the remainder in this historical series, will not collect dust but rather the fingerprints of eager readers.

Part I, in its discussion of spinal cord injuries, outlines evolution of policies in the Zone of Interior and overseas theaters. In the treatment of fracture-dislocation, conservatism was the selected method in the early phases of the war, but before many months all open missile wounds were operated upon by debridement and/or laminectomy, with improved clinical results. This book treats extensively of the organization for the immediate care and rehabilitation of these patients to the time of their final disposition either to civilian life, or more often, to a Veterans Administration hospital. Dr. George C. Prather's chapter on the urologic aspects of spinal cord injuries is an excellent monograph in itself which has been termed by some a "classic." Dr. Spurling's section on the care of patients with herniated nucleus pulposus indicated the futility of trying to return any but a very small percent of these patients to even limited duty.

The management of spinal cord injuries in World War II is among the most brilliant and dramatic medical accomplishments of the entire war. It is an example both of good medicine and of compassionate and understanding care of men who otherwise would have been bedridden cripples all of their lives if, indeed, they had not died because they had nothing to live for.

The principles and techniques of early nerve repair are clearly outlined in Part II of the book. It is interesting to note that these general principles, laid down by Colonel Spurling in the *Manual of Therapy for the European Theater of Operations* and issued on 5 May 1944 in the plan of management for peripheral nerve injuries in that theater of operations, required no substantial alterations in the year of heavy fighting which followed. In the management of these injuries in the Zone of the Interior, the most important advance to come out of World War II was, as elsewhere, applying the general principle of early nerve repair. The problem of when to repair the nerves was compounded by several other conditions: blood vessel damage, fractures, infection, and other body injury. Rarely was primary suture of the nerve in order, no matter how applicable this principle might have been in civilian practice. Painstaking follow-up studies indicated that early repair (sometime between the third and ninth week after injury) produced the best results and could be accomplished with the least technical difficulty. Other things being equal, repair between the twenty-first and twenty-eighth day seemed optimal. The major amount of nerve repair was done in the Zone of the Interior, and it was soon learned that the bulk of the surgeon's time was consumed not in the treatment of head wounds as first predicted, but in the tedious procedures of the surgery of the peripheral nerves.

A second major advance in the treatment of peripheral nerve injuries resulted from a deeper appreciation of the influences of soft-tissue, bone, and vascular injuries upon timing of nerve repair and the technical methods by which it was achieved. Organization of the Zone of the Interior hospitals for the care of these patients is detailed fully, together with the surgical techniques for the exposure and suture of the various main peripheral nerves, complications of bone and vessel injury, testing, neuropathologic changes, and the role of orthopedic surgery in the extensive injury. When the professional talents of neurosurgeons and

orthopedic surgeons were available on a combined ward, combined bone and nerve injuries tended to progress satisfactorily and rapidly. In Zone of Interior hospitals, it was soon proved beyond a shadow of a doubt that with coordination of effort along these lines, nerve repair can be hastened and new approaches to joint problems discovered if a damaged limb is treated, not in terms of its various isolated component parts, but as a single structure. Although progress was not as rapid as it should have been, improvement was eventually achieved by the enthusiastic pioneering of young neurosurgeons and orthopedic surgeons, working as teams, as well as by constant emphasis upon the high priority of peripheral nerve injuries in neurosurgical centers.

Early nerve suture was proved to possess at least three major advantages over delayed suture:

1. Mobilization of the proximal and distal nerve segments was much more readily achieved.
2. Fibrosis in the wound, particularly in the nerve stumps, was reduced greatly.
3. Flexion of contiguous joints was accomplished more easily.

A very detailed discussion of the standard methods of examination in peripheral nerve injuries is included in the chapter by Dr. Frederic H. Lewey. Fourteen case histories are presented in the form of summarized progress notes from hospital charts, to show convenient graphic presentation of motor and sensory signs and muscle atrophies.

Physical therapy in the management of peripheral nerve lesions in World War II had three aspects: diagnostic, therapeutic, and psychologic. Unless the basic physiologic-pathologic changes produced by these injuries were clearly understood, neither logical prescription nor competent management was possible, and the best results were not likely to be obtained.

The Peripheral Nerve Registry was set up in 1944. It contains a record, with the short-term results, of more than 7,000 nerve injuries. Data was derived from this ma-

terial and an analysis prepared, which appears as Appendix E in this volume on neurosurgery. This Registry was utilized further in the preparation of a Veterans Administration medical monograph, appearing in 1956, entitled, *Peripheral Nerve Regeneration. A Follow-up Study of 3,656 World War II injuries*, under the editorship of Dr. Woodhall and Dr. Gilbert W. Beebe. This extensive statistical report, frequently referred to in the present volume on Neurosurgery in World War II, should be at hand for immediate reference.

Nerve surgery is born of war. Interest in it waxes during periods of hostility and wanes during periods of peace. For their knowledge of peripheral nerve surgery, neurosurgeons are chiefly indebted to surgeons faced with the problem in military life. In the second chapter on peripheral nerve injuries, Dr. Woodhall states: ". . . the significance of this volume on peripheral nerve regeneration is that the experience of World War II in the management of peripheral nerve injuries, unlike the experience of World War I, has not been lost." In the strict sense of the word that is true; it is not lost because it is so accurately and completely recorded in this volume on the *History of Neurosurgery*. But this is not enough. Experience is lost unless it is applied in the event of any new emergency. The story of peripheral nerve injuries in World War II, and, even more, the story of injuries of the spinal cord, contain much that is applicable to, and useful in, peacetime neurosurgery.

We particularly recommend this volume, along with Volume I, to everyone involved in dealing with neurosurgical cases, whether they be military or civilian.

Congo Medicine

THE settling of political differences is not the only problem that confronts the Congo. Difficult and complex as these problems may be, there is another aspect of life in this new nation that will re-

quire attention. That is the health of the nation.

The World Directory of Medical Schools of the World Health Organization lists two medical schools in the Congo, one at Leopoldville and one at Elizabethville, neither of which is ten years old. There are ten graduates a year from the two schools. Imagine that for a population of 16 million persons! Add to that the fact that there are less than a thousand physicians for that number of people. The picture presents a real medical problem.

With political unrest, a desire to be independent of all other nations, the expulsion of the foreigner with the know-how, what is to be the fate of the few seeds of modern medicine that may have been planted?

In a tropical land beset with all the tropical diseases, malaria, filariasis, intestinal diseases of all kinds, trypansomiasis, to which we must add smallpox, leprosy, yellow fever, venereal diseases and nutritional diseases, to name only a few, what is going to be the future of man in the Congo?

Before much progress is to be made in this new nation, medicine will have to have its day. How this is to be done is going to be up to a few of the natives who have some small amount of education and leadership ability. The problem is a colossal one and the solution will be years in coming. Unless, of course, this new nation is willing to ask for help in educating its people and the people themselves make a determined effort to better their way of life.

Years will be required before these people can think in terms of modern medicine. If they are wise they will start now to set up some health program and begin a training program for the natives in the matter of health.

The Case of Folic Acid

SINCE the publication of our April issue of the article "The Danger of Folic Acid in Multivitamin Preparations" by Colonel William H. Crosby, Medical Corps, U. S. Army, there has been con-

siderable correspondence. About the same time that Colonel Crosby's article was published there appeared an article in *PB* (Eli Lilly and Company), March-April 1960 issue, entitled "A Case of Misunderstanding."

We have received permission to publish letters in connection with the folic acid problem.

On July 13, 1960 the Food and Drug Administration of the Department of Health, Education, and Welfare proposed a regulation which would require that vitamin preparations containing high levels of folic acid (more than 0.4 milligram or 400 micrograms per daily dose) be sold only on prescription.

Letters to the Editor

April 28, 1960

DEAR SIR:

After reading Col. Crosby's article, "The Danger of Folic Acid in Multivitamin Preparations," I read, "A Case of Misunderstanding" in *Lilly's PB*.² I ask this question, "Which am I to believe?"

Yours truly,
AUGUST HELMBOLD, M.D.
(Newport, Kentucky)

April 30, 1960

DEAR COLONEL BITNER:

Thank you for referring to me the letter from Dr. Helmbold. I had written to the Eli Lilly Company to protest that irresponsible editorial published in their bulletin. Their editor, Dr. W. O. Waife, and I have exchanged several letters on the subject. Dr. Helmbold and your other readers may be interested, so, with Dr. Waife's permission, I am sending these letters to you.

WILLIAM H. CROSBY, M.D.

21 April 1960

S. O. WAIFE, M.D.
Editor of "PB"
Eli Lilly and Company
Indianapolis 6, Indiana

DEAR SIR:

You probably understand the difference between education and advertising. Although they sometimes appear to coincide, the motives are somewhat divergent. When advertising attempts to masquerade as education, the uninformed must beware.

I have read in your *PB* for March-April 1960 an unsigned item called "A Case of Misunderstanding." The commercial motivation behind this thing

is evident to anyone. With some background, one can recognize its distortions and falsifications.

The fact that you flout is that patients with untreated pernicious anemia do develop spinal cord injury, and folic acid without Vitamin B₁₂ masks the diagnosis and may hasten the injury. These people deserve to be protected against the incautious administration of folic acid. This should be done, regardless of the effect on the sale of multivitamin preparations.

The medical profession also could use some protection—protection against the devil's quoting scripture.

Very truly,
WILLIAM H. CROSBY, M.D.

April 26, 1960

DEAR DR. CROSBY:

Thank you for your letter of April 21. We appreciate your writing to us although you disagree with the views expressed in the article "A Case of Misunderstanding" (*Physician's Bulletin*, March-April, 1960). I think you will find we are really in agreement. If I may, I would like to answer the points you raised.

You said "patients with untreated pernicious anemia do develop spinal cord injury, and folic acid without vitamin B₁₂ masks the diagnosis and may hasten the injury."

With this we are in complete agreement. Note that on the first page (p. 27) we said "when folic acid was used *alone* (italicized) in pernicious anemia, the blood picture, but not the neurologic status, improved. . . . Therefore, for years no one has advocated the use of folic acid *alone* in the treatment of pernicious anemia." I wonder if you won't agree with our statement.

You next say in your letter: "These people deserve to be protected against the incautious administration of folic acid."

With this we also agree and indeed gave special emphasis to this point, particularly to what you aptly call "incautious." Note that in the summary (p. 29) we say, "new data indicate that *small doses* (we referred to Davidson and Jandl,³ of folic acid do not produce hematologic remission in pernicious anemia. . . . Patients with suspected or proved pernicious anemia should *always* (italics) receive hematinic preparations containing adequate amounts of vitamin B₁₂ (with intrinsic factor)."

Perhaps if you would care to review the article carefully again, it may be that our views truly coincide but are expressed somewhat differently.

We would be very interested in any comment you may have to make. We still believe, however, that the profession has misunderstood the situation. As we said, because folic acid *alone*, and in larger doses, masked the hematologic evidence of pernicious anemia, allowing neurologic progression, some persons, by a process of faulty logic, concluded

that *all* folic acid is bad. We believe that (a) vitamin B₁₂ (parenteral, or with potent intrinsic factor material, if oral) is the only treatment of pernicious anemia; (b) small doses, to a patient with pernicious anemia; (c) but will help people with folic acid deficiency; (d) multiple vitamin preparations may safely contain small doses of folic acid (0.5 mg., which is an NRC *dietary recommendation*) for they will not "mask" pernicious anemia.

Very truly yours,
Eli Lilly and Company
(Signed) S. O. WAIFE
Head,
Medical Editorial Department

28 April 1960

DEAR DR. WAIFE:

I have your letter of 26 April in reply to mine concerning the unsigned piece, "A Case of Misunderstanding," which was published in *Physician's Bulletin*, March-April 1960. You demonstrate that it is possible to select isolated statements from the article with which I agree. There are also statements in your letter with which I agree. But I disagree with the argument and intent of both compositions. It is my belief that such attempts at deception are not in the public interest.

The statement that Dr. Conley does not understand the situation is not only misleading, it is false.

It should be evident that Dr. Conley's patients were injured and that they had not received vitamin B₁₂. It is evading the issue to dismiss such cases by saying they *should* have got B₁₂. As long as multivitamin preparations with folic acid can be purchased they will be used incautiously and this sort of injury will happen. These are preventable accidents, but the effect of the statement in PB would be to obstruct the prevention. Such statements also ignore the obvious fact that folic acid is present in food.

The statement concerning Mi-Cebrin is a rash extrapolation of the insufficient work of Marshall and Jandl. They treated three patients for two weeks and found little or no hematologic response; but what would happen in three weeks or three months? People who take vitamins don't stop after two weeks. The Lilly advertisements⁴ imply that Mi-Cebrin should be taken for life. Jandl's subjects were patients with PA in relapse. Before making claims of the innocuousness of folic acid, patients in hematologic remission should also be tested. Withdraw the B₁₂ and give them folic acid to learn which happens first—hematologic or neurologic relapse. These are difficult, but they are the sort of experiment which should be done before the population is placed at risk by concluding that even small doses of folic acid can do no harm.

Regarding the patient with PA who takes Pulvules Trinsicon—what happens to him when he

"develops immunity" to the heterologous intrinsic factor and stops absorbing the vitamin B_{12} ?

The paragraph on "Vitamin Interaction" is a good example of non sequitur.

I feel confident that you are aware of the nature and purpose of your advertisement. My cataloguing a few of its faults is intended not to instruct you but to assure you that I have, as you suggested, read it carefully again. And having read it again, I find it false and misleading and directed against the public interest.

Very truly yours,
WILLIAM H. CROSBY, M.D.

On June 3, 1960, Dr. Waife was in Washington to discuss the folic acid problem as he indicates in his next letter.

June 7, 1960

DEAR DOCTOR CROSBY:

I enjoyed meeting you and exchanging views on the somewhat controversial subject of folic acid. I promised to summarize my views for whatever value they may have in the editorial you are writing. I must point out that I am not a spokesman for the pharmaceutical industry in this matter, nor indeed are these views the official opinion of Eli Lilly and Company. They merely reflect my own, and have appeared with some modification in *Physician's Bulletin*.

I also hope I will have the opportunity of reading your editorial before submission so that I will be responsible for the wording of these views.

1. There should be a clear distinction between vitamin supplements (meant as adjuncts to the diet) and hematins (meant to treat anemia).

2. Vitamin supplements should not contain large doses of folic acid, i.e., 5 mg. per dose and up.

3. A dose of folic acid in the "dietary range," i.e., 0.5 mg. or less per day, is, in our opinion, safe, harmless, and not the cause of any authenticated instance in which the anemia of pernicious anemia was "masked" while neurologic lesions progressed. To us the evidence is clear that when such masking did occur, (a) the dose of folic acid was ten or more times the recommended dietary intake (5 mg. plus) or (b) there was combined system disease early.

4. Oral hematins, on the other hand, may contain adequate amounts of folic acid, but these should always also contain full therapeutic amounts of vitamin B_{12} —and intrinsic factor.

5. Regarding the report of Conley and Krevans, three of their five patients had definite anemia (under 3.5 million RBC) and hence the anemia was not "masked." Incidentally, the initial blood count was not performed until two weeks after admission in two cases, and one wonders why.

These three had macrocytic anemia, which in the presence of achlorhydria and neurologic disease should have made the diagnosis highly probable. In one case there was no evidence that the multiple-vitamin preparation even contained folic acid at all. One patient had neurosyphilis. The signs of ataxia, absent vibratory sense, etc., could have been due to neurosyphilis. None of the five took vitamin preparations containing nutritional amounts of folic acid (see above).

6. We know of no data showing neurologic progression in patients receiving a potent hematinic (with vitamin B_{12} and folic acid) even if therapeutic amounts of folic acid were also present.

7. That Sheehy et al.⁸ found the anemia of tropical sprue responds to minute doses of folic acid does not lead to the conclusion that patients with pernicious anemia will also respond to this dosage. We believe Marshall and Jandl's work clarifies this point.^{6,7} Incidentally, Sheehy reported that neurologic complications did not occur in patients with tropical sprue maintained on folic acid alone for over two years despite continued low serum vitamin B_{12} levels.

8. We believe, in short, that multiple-vitamin preparations used as nutritional supplements may safely contain physiologic amounts of folic acid, i.e., 0.5 mg. or less a day. (This is also the NRC's dietary recommendation.) As a therapeutic agent, as in hematins, the dose should be ample, but vitamin B_{12} plus intrinsic factor should always be included.

I would be interested in your comments. Again, may I thank you for the courtesies shown me in Washington, and I would like to extend an invitation to visit us anytime you are in this part of the world.

Best wishes.

Very truly yours,
S. O. WAIFE
Head,
Medical Editorial Department

10 June 1960

DEAR DR. WAIFE:

Thank you for your letter of June 7.

Your belief in the safety of the "small" dose of folic acid remains unfounded; as you say, it is an opinion. Our divergent positions reflect a difference in attitude concerning the public interest.

As I pointed out in my last letter, there is insufficient information to say with assurance that any dose of folic acid, however small, can be considered safe. Until we have the information, our opinions or anyone's, even those of the National Research Council, are of questionable value.

At this point you and I diverge. Although I may agree with your opinion that 0.5 microgram

of folic acid is probably harmless, I find myself unwilling to place anyone at risk needlessly on the basis of such an opinion. It is because of this concern that I believe it to be in the public interest to eliminate folic acid from multivitamin preparations.

It is unfortunate that a lack of this concern permits the publication of statements such as the one which occasioned the writing of this series of letters: "A Case of Misunderstanding" in the Eli Lilly Physician's Bulletin.

Yours truly,
WILLIAM H. CROSBY, M.D.

P.S. In *JAMA* for May 21, 1960,⁸ there is reported a case of untreated pernicious anemia with 14 grams of hemoglobin and a normoblastic bone marrow. The patient had developed degenerative disease of the spinal cord while taking, for a period of four months, a multivitamin capsule containing a "small" dose of folic acid, 330 micrograms. The neurologic defects were partially corrected after treatment with vitamin B₁₂ was begun.

REFERENCES

- ¹ Crosby, W. H.: The danger of folic acid in multivitamin preparations. *Mil. Med.* 125:233, 1960.
- ² Eli Lilly and Company. A case of misunderstanding. *Physicians Bull.* 25:27, 1960.
- ³ Davidson, C. S., and Jandl, J. H.: Editorial—On the daily allowance for folic acid. *Am. J. Clin. Nutrition* 7(8):711, 1959.
- ⁴ Eli Lilly and Company. *Lilly Vitamins . . . The Physician's Line.* Blood 14:opp. 1269, 1959.
- ⁵ Sheehy, T. W. and Rubini, M. E.: Primary folic acid deficiency in tropical sprue. *Clin. Res.* 8(2):215, 1960.
- ⁶ Sheehy, T. W., Perez Santiago, E. and Rubini, M. E.: Relationship of vit. B₁₂ to folic acid deficiency in tropical sprue. *Clin. Res.* 8(2):218, 1960.
- ⁷ Marshall, R. A. and Jandl, J. H.: Responses to "physiologic" doses of folic acid in the megaloblastic anemias. *A.M.A. Arch. Int. Med.* 105:352, 1960.
- ⁸ Ellison, A. B. C.: Pernicious anemia masked by multivitamins containing folic acid. *J.A.M.A.* 173(3):86, 1960.



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A prize of not more than \$1500, a gold medal, and a Life Membership in the Naval Institute is offered *annually* for the best essay on any Naval subject submitted in the contest.

The following rules govern:

1. Essays should not exceed 5000 words.
2. Essays must be received by the Secretary of the U. S. Naval Institute (Annapolis, Maryland) not later than November 1.
3. Each essay must have a motto in addition to the title. The motto must appear on the title page of the essay, on the outside of the envelope which will be sealed and contain a paper containing the identification of the author of the manuscript, the motto, and the title of the manuscript. *The name of the author will not appear in any other place in the material submitted.*
4. Essays must be typewritten, double spaced, and submitted in duplicate.
5. Essays should be analytical or interpretive and not merely an exposition or personal narrative.

Any further information may be obtained from the Secretary of the U. S. Naval Institute, Annapolis, Md.

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COL. LUCIUS A. SALISBURY, MC, N.Y., NG (1944)	BRIG. GEN. AMOS R. KOONTZ, MC, Md., NG (1957)
ASST. SURG. GEN. WARREN F. DRAPER, USPHS (1947)	COL. CHARLES R. MUELLER, U. S. Army, Ret. (Vet. Adm.) (1958)
VICE ADM. JOEL T. BOONE, MC, USN (1949)	MAJ. GEN. H. H. TWITCHELL, USAF, MC (1959)

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Around the World

(Ser. III, No. 23)

By

CLAUDIUS F. MAYER, M.D.

WUDDINA and Ceduna are the two base hospitals around which the Bush Church Aid Society (of the Church of England) built up its *Flying Medical Service* which is located west of Spencer's Gulf in *South Australia*. This health organization and medical facilities are a marvelous Christian effort for the benefit of mankind. Outpost branches exist at Penong, Cook and Tarcoola islands. At Ceduna, the Society operates its own short-wave radio station which has 70 branch posts. All medical personnel, nurses, doctors, etc., and pilots are employees of the Society. There is always need for willing medical practitioners.

The Maoris are also on the way of their racial renaissance. Since 1840 when New Zealand was first invaded at large by European settlers and traders, the imported diseases almost extinguished this ancient race. By 1896, only some 42,000 were left from an original 200,000 estimated by Captain Cook in 1769.—During the past fifty years, though, the Maori population figure increased continuously, and now it reaches 135,000, which means still about 6% of the European population in New Zealand. The birth-rate of the Maoris is twice as large as that of the people of European origin. The Maori mortality is also lower for such diseases as cancer, heart disease, or nervous disease. It is most likely that close integration with the Europeans will increase the death rate of the Maoris again.

Blood pressure surveys among primitive peoples are always of special interest, partly because they may reveal some new factors which influence the fluctuation of the arterial pressure, partly because there is still no general agreement about the basic values of hemodynamics. Studies of blood pressure among various ethnic groups are considered

to be within the domain of anthropology rather than of medicine. That is perhaps the reason that the study of blood pressures in the *Australian aborigines* was also conducted by an *anthropological expedition* financed by U. S. and Australian research funds (Adelaide University). The combined findings show that the systolic pressures at 40 years were 136 mm Hg for men, and 140 for women. The diastolic pressures were 80 for men, and 79.8 (!) for women. The observations indicate that the Central Australian natives have low pristine systolic pressures that rise with increasing European contact; Queensland's natives have high pristine values that fall with Europeanization. No other generalization is possible from the survey, neither can the reader decide what should now be called a normal pressure.

In a *survey of paraplegics* in the State of *New South Wales*, it was found that, among 44 cases in which the cause of paraplegia was shown, 32 were the results of injury such as motor-car accidents (14), diving into shallow water (4), fall from height (4), fall from horse, etc. Thus, at least this proportion of the paraplegias is theoretically preventible.

In connection with the "Fourth Report from the Select Committee on Estimates, Session 1958-59: The Medical Services of the Armed Forces (1959, London)," the Editor of the *Med. J. of Australia* recalls the various efforts which were also made in *Australia* to combine the medical service of the Army, Navy, and Air Force. Such a suggestion had already been made in 1922 in Australia, and in 1927 the medical service of the Royal Australian Air Force lost its independence. It was, however, restored in 1940. After World War II, the Director-General of the Medical Services of the Aus-

tralian Military Forces again urged a maximum degree of coordination. Since World War II, such a *unification of the armed forces medical services* has been investigated and urged in many countries, and in some of them various degrees of coordination and integration have been achieved (Pakistan, the Philippines, India especially). The U. S. created an Assistant Secretary of Defense (Health and Medical), and adopted the single manager system. In Canada, the medical service became unified in January 1959. Nothing is known about its advantages or failures, however. *In Great Britain*, first the Waverly Committee (in 1953) then the present Select Committee on Estimates was dealing with the unification problem. The present report includes a recommendation for integration as the long-term objective, with the provision that the services first should study the working of the Canadian scheme. On the medical side, opposition arose because *naval medicine* and *aviation medicine* are specialized fields as opposed to *military medicine*, not to mention the devastating effect on the morale of the medical officers.

Endemic goiter is rather frequent *in the Central American states*, both its diffuse and nodular forms. A few years ago, a survey of school children in El Salvador revealed that out of 35,000 children, 22.8% had enlarged thyroid. In Panama, the rate of endemic goiter is put at 46.6%. A recent *survey in Honduras*, which included about 1% of the total population of the country, showed an incidence rate of 22.6%. At certain areas of the small country, the rate was as high as 43.6%. Only 14% of the goiters were noticeable. Since the common salt which is used in the Central American countries is relatively rich in iodine, *other goitrogenic factors* must be also considered, beside an iodine deficiency. It was suggested that the presence of vitamin A deficiency creates an increased demand for such high amounts of iodine which the normal drinking water cannot supply. In 1952, a London Goiter Conference suggested the use of specially io-

dized salts (1 part iodine to 100,000 parts of salt). In Honduras, the iodization of salt had to be increased to 1 part iodine in 10,000-20,000 parts of salt.

In *Yukon Territory* in Canada, there is an *Indian village* by the name of *Old Crow*, situated above the Arctic Circle where the river of that name enters the Porcupine, a large northern tributary of the Yukon. It is 35 miles east of the Alaskan boundary, 100 miles north of the Arctic Circle and about the same distance inland from the Arctic Coast. A couple of years ago, a group of American, Norwegian, British and Canadian scientists set out from Anchorage's Arctic Health Research Center on an expedition for the investigation of the physiological response to cold. During this expedition they spent six weeks at Old Crow (Aug. 20-Oct. 1, 1958). The population of the village is *Athapaskan Indian* of the Kutchin tribe. The village developed in the 19th century as a post of the Hudson Bay Company. It grew by the addition of a post for the Canadian "mounties," by various church missions, erection of a school, and so on. The approximate population is 170; 23% are preschool children, 22% are young adults, and 28% are over 35 years of age. People live a life of strenuous physical activity. Seventy percent of the inhabitants are pure-blooded Indians who are distinct from the coastal Eskimos.

The *Indian and Northern Health Service* maintains a registered nurse in the village. Drugs and other medical supplies come by barge, or by aircraft from Aklavik, the next large town with which the mounted police maintain daily radio contact. Patients in need of hospital care are flown out to Aklavik, at about 1½ hours' flying time to the east. X-ray surveys are done annually, and the films are read at Aklavik. At the same town, a dentist and an ophthalmologist are also available for periodical visits to Old Crow.

The expedition made *survey examinations*, partly for the purpose of selecting proper subjects for the physiological studies.

Adults over 35 were chiefly examined for the presence of cardio-vascular diseases (arteriosclerosis). Most of the young adults were in good health. They had but a few signs of previous disease (pulmonary tuberculosis, scrofuloderma, etc.). Among 45 school children, 10 had enlarged tonsils, 6 had scarred eardrums, 11 had dental caries. Among the adults (46), only 10 gave a history of old tuberculosis. A woman was paraplegic due to multiple sclerosis, and one had Paget's disease of the nipple. There were no cases of arteriosclerotic heart disease, though one elderly man had cardiac arrhythmia. The general nutrition was good, and no evidence of specific vitamin deficiencies or of other metabolic diseases was seen. The strenuous physical activity had no apparent deleterious effect on health.

The major source of protein and fat comes from caribou hunting and from fishing, yet the population is also consuming cereals, carbohydrates, dried and fresh fruits and vegetables. A large family requires about 100 caribou a year. Spoiled meat goes to the dogs which are also fed dried fish and muskrat. Very little legal alcohol is consumed. The estimated total income of the village from the sale of furs was \$22,000 and from the sale of wood, old age pension, relief and so on, \$18,000 (a total of \$40,000 annually). The annual expenditures are \$30,000 ($\frac{2}{3}$ of it is for food, $\frac{1}{3}$ for clothing, ammunition, fish nets, and so on.) Clothing is mostly imported, but caribou skin is locally processed and used for the making of moccasins, mittens, winter clothing, and bedding. This industry is in the hands of women. Housing is in one-story log houses; rarely in tents. Water is carried from the river by bucket. In winter, the river ice is used. Of course, the water supply is untreated. Human waste disposal is by pit latrines, though the permafrost is only a foot below the surface. Yet, the villages are usually clean and tidy, controlled by regulations.

The Gurkhas who serve in the British Army in Malaya, Singapore, and Hong

Kong have a special *tuberculosis sanatorium* which is at Kinrara, some nine miles from Kuala Lumpur. They have a well planned preventive service against tuberculosis. This includes, for instance, x-ray of the chest before and after the six months' leave which every Gurkha has with each three years of completed service. At this time, they usually visit Nepal, their homeland. Each Gurkha unit maintains a register in which they enter the dates of routine radiographs, dates of the BCG vaccinations if any, and the follow-ups of all contacts. It is the responsibility of the commanding officer to keep this record book alive. In the Gurkha Tuberculosis Sanitarium, all the ethnic characters of the Gurkhas are respected. There is even a special Gurkha kitchen where all native foods are handled, prepared and later served by native cooks from electrically heated trolleys. Meat is "on the hoof" and is dispatched in traditional style outside the kitchen. If thoracic surgery is necessary, the officers are sent to England; but there is also a facility for chest operations at the *Lady Templer Hospital* in Kuala Lumpur. The Gurkhas have a natural dislike for any planned operations on their chest. They do not want to wear any scars which are not the results of battle injuries. However, they are very obedient patients since they learned that tuberculosis no more means the end of their soldierly career, and that from the hospital they still might return to the regiment and again march proudly to the skirl of the pipes.

Notification of communicable diseases is not uniform all over the world. In certain countries and territories, for example in Finland, Japan, Hong Kong and Viet Nam, only about 15 diseases are notifiable. On the other hand, Czechoslovakia, Honduras and parts of the U. S. (Iowa and Colorado) have lists with about 60 or 70 diseases. Most lists contain about 20-30 notifiable diseases. Unfortunately, notification of carriers is rarely required (Quebec). In some countries, the duty of notification is resting mainly with the head of the household.

A few years ago, the Expert Committee on Zoonoses (WHO) redefined the term "zoonosis" as a disease or infection which is naturally transmitted between vertebrate animals and man. More than 100 of these are now recognized. In a report of this Committee the following zoonoses were extensively discussed: salmonellosis, leptospirosis, animal tuberculosis, anthrax, psittacosis (ornithosis), Q fever, arthropod-borne viral encephalitides, and echinococcosis. *Cat-scratch disease* is also a typical zoonosis. It has been reported recently from many countries. Though the disease is named after the cat, not all cases are associated with cat scratch. The etiological agent is still unknown. The animals who carry the disease show no sign of any ailment. In fact, nobody succeeded to infect cats or dogs, or laboratory animals with the disease. It is believed that a special type of virus is responsible for it.

Studies in a Japanese farm village near Hiroshima City showed that *essential hypertension* among these people has an entirely different clinical picture than in western adults. The chief reason is that these people have a pure form of essential hypertension which is unadulterated by the signs and sequelae of atherosclerosis. This shows that, although hypertension and atherosclerosis mutually help each other in the development of serious sequelae, they are not necessarily tied etiologically together. (This had been also known from some recent experiments on animals). It is known that hypertension is a common and serious disease in Japan, but *coronary artery disease is rare* in the common laborers. Hence, in Japan the hypertensive deaths are cerebral and not cardiac, as in the western society. But what may be the cause of the cerebrovascular complications in the Japanese hypertensive individuals if not atherosclerotic changes? This is not quite clear. A *Japanese diet* is primarily vegetarian, low and largely unsaturated fat, average protein, high carbohydrate, high salt diet. The daily fat intake is not more than 30 gm. and it is mostly from

vegetables and fish. Protein intake is about 70 gm. daily. Calories are mainly derived from cereals (mostly rice). Salt intake averages from 17 gm. to 27 gm. daily. Areas of the greatest salt intake are the ones in Japan where the hypertension is also the most prevalent.

If we compare with this, for instance, the *Italian diet*, the statistics of food consumption in that country show that the average daily food intake of an Italian inhabitant included 95.4 gm. protein, 63.9 gm. fat, and 467.4 gm. carbohydrates in 1954, with an average caloric uptake of 2,888 calories. A few years ago, the daily menu was worth only 2,540 calories. Of the protein, 70.5 gm. was of vegetable origin, and 24.9 gm. was animal protein.

In 1957 or '58, a doctor's wife in London initiated and founded the *Cruse Club for the counselling and practical helping of widows* and their families. The experiences of this new type of social service must be of great interest to any family physician since in England and Wales alone there are 2½ million widows, and of every five married women in that country one is a widow. In England and in the present western civilization, widowhood usually means an emotional as well as an economical problem, and though many are able to cope with these problems, many would also welcome some sort of guidance, counselling and understanding in the transitional period of strain and stress. The presence of orphan children further aggravates the situation. A family doctor also knows that widows in their loneliness become more concerned with their bodily processes and have a greater incidence of psychosomatic complaints. Much of this can be healed by full or part-time employment. *A sense of being wanted and of use to the community is perhaps the best antidote to depression.* The Cruse Club is for the support and encouragement of recent and older widows, for their education to growing independence.

In Holger Werfel SCHEUERMANN (1877-2 March 1960), Danish military sur-

geon, the world lost an excellent radiologist. His description of a type of juvenile kyphosis appeared in the "Ugeskrift for laeger" in 1920, and it will remain to be known as "*Scheuermann's disease*." His busy professional work still left him some time to play his cello in chamber music quartets.

The Jugoslav Army is celebrating this year the decennial birthday of its *Military Medical Academy* which was founded in 1950. On this occasion the "Vojnosanitetski pregled" (Military medical review) issued a commemorative number (No. 4, vol. 17, 1960 April) which is a testimonial of the high level of military medical science in Tito's country. Among the excellent articles we select one (a) on the acute toxicity of armin, one of the war gases, (b) studies on the toxicology of LSD-25, or lysergic acid, and (c) one on the epidemiology of Q fever in the Jugoslav Army. The issue, which has almost 150 pages, is richly illustrated with good clinical pictures, some of them colored.

This number of the Jugoslav military medical journal reminds us of the increased frequency of publications on the effects of war gases. It is especially noticeable in the iron-curtain publications. By the way! Some of our most innocent looking insecticides are the most deadly poisons, and as organophosphoric substances they are close relatives of armin, tabun, and of the other prospective war gases with effect upon the sympathetic and central nervous system. It has been known for some time that certain pesticides used in public health and agriculture are toxic hazards to man. The dangers of insecticides, fungicides, molluscicides, herbicides and rodent killers were also pointed out by the WHO, though no large scale poisonings of people resulted so far from their use. People are exposed to the action of these poisons by their occupations, or in their households, or by a mishap or by food contamination. It is a great responsibility of all governments to control the hazards of pesticides by adequate regulations. Certain countries also established rules for the control of residual pesticides in treated food.

The policing of such rules and orders creates a serious administrative and scientific problem everywhere. At present, no one dares to set up safe limits for pesticide in food. (Remember the U. S. cranberry affair of last year!)

According to the recent reports found in Chinese medical journals, the enthusiasts of traditional Chinese medicine and of acupuncture are going so far as to suggest these methods for the treatment of pulmonary tuberculosis, for complicated cases of appendicitis, and so on. Acupuncture is sometimes combined with the fire treatment by moxibustion. Chinese doctors at the *Ti Tan Tuberculosis Hospital in Peking* assert that in 60.7% of all tuberculosis cases the symptoms disappeared completely in the patients. What streptomycin and the other western drugs could not do, acupuncture did! Of course, much depends in acupuncture—as we are told—upon the points where the needle is inserted, and upon the way in which the needle is rotated and manipulated. In case of hemoptysis, the principal points of needling are the "chü ku, Ch'ig tse and the fei shu." In night sweating, they are the "pai lao, yin hsi, ho ku, and fu liu." It is also important, as the traditional doctor believes, to insert the needle during exhalation, and withdraw it during inhalation. As the reporting doctor remarks, acupuncture was comparatively effective in the infiltrative type of cases, but less effective in the chronic fibrosis cavernous type. In appendicitis, a satisfactory result was obtained in 31 out of 39 cases by acupuncture alone (!?) In other cases of appendicitis, cupping was also done at the acupuncture points. The medicinal treatment of appendicitis includes the drinking of a rheum-paeonia decoction to which sodium sulfate laxative is also added. The laxative is stopped if the abdomen "appears enlarged" (generalized peritonitis). In children, it is held advisable to do an appendectomy because "the drugs are too bitter."

A British doctor who was returning from the Orient travelled home through Turkey

and Greece. He was alarmed by the number of business men, cars and tourists from West Germany. This showed to him clearly that *Germany displaces Britain in the economic field*. His visits to the Turkish and Greek hospitals in Istanbul and Athens also convinced him that *British medicine was also taking second place to German science*. He found everywhere specialists who had their postgraduate training in Germany, and also equipment, drugs, textbooks, and medi-

cal films came from that country. There were also exchange students at the university clinics of Istanbul and Athens. The leading medical and scientific bookshop in Istanbul had only two British textbooks; all the other textbooks were American or German. With the rapid resurgence of West Germany in the economic and cultural field, the doctor is afraid that a *gradual decline of the British influence* is inevitable! . . . *Multa paucis!*



CHIEF, DENTAL CORPS, U. S. ARMY



U. S. Army Photo

Left to right: MAJ. GEN. JOSEPH L. BERNIER, DC, USA; LT. GEN. LEONARD D. HEATON, MC, USA; MAJ. GEN. R. V. LEE, USA, TAG

On August 1, 1960, Major General Joseph L. Bernier, Dental Corps of the U. S. Army, was administered the oath of office as Assistant Surgeon General and Chief, Dental Corps, U. S. Army. The oath was administered by Major General R. V. Lee, The Ad-

jutant General of the Army in the presence of many persons, including Lieutenant General Leonard D. Heaton, The Surgeon General of the Army, and former Chiefs of the Dental Corps.

NOTES

Timely items of general interest are accepted for these columns. Deadline is 1st of month preceding month of issue.

Department of Defense

Ass't Secretary (Health & Medical)—HON. FRANK B. BERRY, M.D.
Deputy Ass't Sec'y—HON. EDW. H. CUSHING, M.D.

PROFESSIONAL DIRECTOR OF MEDICARE

Colonel W. D. Graham, MC, has been appointed as Professional Director of the Office for Dependents' Medical Care. He succeeds Colonel Norman E. Peatfield, MC, who has become Surgeon of the Seventh U. S. Army in Europe.

Colonel Graham, a graduate of the University of Minnesota Medical School, commanded the 158th General Hospital in the European Theater of Operations during World War II. After the war he served as assistant Chief, and Chief of the Hospital Division, Office of the Surgeon General.

He was awarded the Master of Public Health degree from the University of California in 1949 and in 1958 graduated from the Army War College. He is a Fellow of the American College of Physicians and of the American College of Hospital Administrators.

Army

Surgeon General—LT. GEN. LEONARD D. HEATON
Deputy Surg. Gen.—MAJ. GEN. THOMAS J. HARTFORD

644

HEADS RESEARCH AND DEVELOPMENT COMMAND

Brig. General James H. Forsee, MC, who has been serving as Deputy Commander of the Walter Reed Army Medical Center and Chief of the Department of Surgery has been named Commanding General, U. S. Army Medical Research and Development Command.

General Forsee entered on active military duty on July 1, 1929, and has specialized in surgery during his military career. During World War II he was Commanding Officer of the Second Auxiliary Surgical Group from May 1942 until its deactivation in Florence, Italy, September 15, 1945. This Group treated more than 25,000 severely wounded casualties throughout the campaigns of North Africa, Sicily, Italy, France, and Germany.

General Forsee is author of the textbook, "The Surgical Treatment of Pulmonary Tuberculosis" which is published by Lea and



BRIG. GEN. JAMES H. FORSEE, MC

Febiger. A Japanese translation was published in 1955. He is author of more than 70 scientific papers.

ASSIGNED TO EUROPE COMMAND

Brig. General Joseph H. McNinch, MC, who has been Commanding General of the Research and Development Command, has been assigned to the U. S. Army Europe. He is scheduled to replace Major General

the Surgeon General. He replaces Colonel James B. Stapleton who has been assigned to take over command of William Beaumont General Hospital in El Paso, Texas.

On leaving the assignment as Surgeon of the First Army, Colonel Doan was presented with the 2nd oak-leaf cluster for the Commendation Medal. Presentation was made by the Commanding General of the First Army, Lt. Gen. Edward J. O'Neill.

ASSIGNMENT

Colonel Frederick W. Timmerman, MC, has been appointed Deputy Commander, U. S. Army Medical Research and Development Command, Washington, D.C. During the past year he has been the only Army Medical service representative in the 1959-1960 course at the Industrial College of the Armed Forces, Fort McNair, Washington. He had formerly served as Executive Officer of the Command of which he will now be Deputy Commander.

INSPECTOR GENERAL OSC

Lt. Colonel Gordon A. Jones, MSC, has been detailed for duty as Inspector General, Office of the Surgeon General. He replaces Lt. Colonel Gordon F. McCleary who has been assigned to the Irwin Army Hospital, Fort Riley, Kansas.

He has served previously in the Surgeon General's Office; in 1951 he was assigned to the Personnel Division of that office. Colonel Jones holds an M.A. degree in Psychology and also Hospital Administration.

ASSIGNED TO WRAMC

Lt. Colonel Edwin S. Marsh, MSC, has been assigned to the Walter Reed Army Medical Center as Information Activities Officer. For three years he has been executive officer of the U. S. Army Hospital, Muenchweiler, Germany.

The field of public relations is not a new one to Colonel Marsh. Prior to his active duty in 1940 he was news editor of the West Side News and public relations supervisor for the Grand Rapids Recreation Department. He was public relations officer at Percy Jones Hospital Center, Battle Creek,



BRIG. GEN. JOSEPH H. MCNINCH, MC

James P. Cooney, who has been at the Headquarters of the Army Command in Heidelberg, and who has returned to the States for retirement.

General McNinch has served in many important assignments in the Army. These have included that of Deputy Surgeon of the United Kingdom Base in the European Theater; Director of the Army Medical Library (now the National Library of Medicine); Preventive Medicine Officer, U. S. Forces Far East; and Chief of the Personnel Division, Office of the Surgeon General, and Surgeon, Army Forces Far East.

CHIEF OF PERSONNEL AND TRAINING

Colonel Howard W. Doan, MC, who has been Surgeon of the First U. S. Army in New York, has been appointed as Chief of Personnel and Training Division, Office of

Mich. He has been Deputy Chief and Chief of the Technical Liaison Office, Office of the Army Surgeon General, and later was for three years, public information officer at the Brooke Army Medical Center, Fort Sam Houston, Texas.

HISTORY OF NURSE CORPS

The U. S. Army Medical Service Historical Unit is engaged in the preparation of the History of the U. S. Army Nurse Corps. Reference material of a historical nature such as records or articles of professional and scientific significance, personal letters, journals, speeches and photographs which relate to the activities of the Army Nurse Corps are needed to highlight and augment official references.

Individuals who possess such material will do a service if they will forward it to the Director, Historical Unit, USAMEDS, Forest Glen Section, WRAMC, Washington 12, D. C. Material will be returned after it has served its purpose if desired.

MEDICAL HISTORIES AVAILABLE

Fifteen volumes have now been published in the series "The History of the Medical Department, United States Army in World War II," and 23 more are planned. The publications contain data on caring for large numbers of injured.

Titles of volumes currently available are: *General Surgery; Hand Surgery; Neurosurgery, Vol. I and II; Ophthalmology and Otolaryngology; Orthopedic Surgery, ETO; Orthopedic Surgery, MTO; Physiologic Effects of Wounds; Vascular Surgery; Cold Injury, Ground Type; Dental Service; Environmental Hygiene; Personal Health Measures and Immunization; Communicable Diseases; Hospitalization and Evacuation, Zone of Interior.*

CIVIL DEFENSE ACTIVITIES DISCUSSED AT BAMC

Recently twelve outstanding military leaders of World War II were at Brooke Army Medical Center as personal guests of Brig.

General James L. Snyder, Commandant of the Army Medical Service School. One of the group, Lt. General Clarence R. Huebner, who during World War II commanded the First Division in Europe, discussed Civil Defense activities. He is now Director of Civil Defense in the State of New York.

The general officers were taken to Camp Bullis to see a field demonstration of the Army's plans for caring for thousands of casualties created simultaneously through possible atomic attack.



U. S. Army Photo

Reminiscing over World War II. (L to R) GEN. WALTER KRUEGER, USA, Ret., commanded Sixth Army in Pacific; LT. GEN. CLARENCE R. HUEBNER, USA, Ret., commanded First Division in Europe; GEN. COURTYNE H. HODGES, USA, Ret., commanded First Army in Europe.

PARENTS BLAMED FOR MANY BURNED CHILDREN

Carelessness was responsible for the injuries of all severely burned children brought to Brooke Army Medical Center, Fort Sam Houston, Texas, this year for treatment by the burn experts of the Surgical Research Unit.

Here is only one case. Hard to believe, isn't it? A two-year old and a four-year old played with paint and, of course, got it on themselves. Thoughtless parents took the children to the bathroom to remove the paint. With what—gasoline!! A gas heater was burning in the room to keep a nice even temperature. Yes, it happened! The children were severely burned. Both died.

In the first six months of this year fifty-one patients were brought to the Surgical Research Unit burn ward for treatment. Twenty-one of these were children. This Unit through years of study and research has gained a renowned place in the treatment of burns.

DIETITIAN AND PILOT

Captain Mary A. Armstrong, AMSC, Chief of Food Service at the U. S. Army Hospital, Fort Huachuca, Arizona, is a pilot and owns her own plane. She developed an interest in flying when she was in the ninth grade.



U. S. Army Photo

**CAPT. MARY A. ARMSTRONG, AMSC,
and her plane.**

Recently Captain Armstrong was in the "Powder Puff Derby," a cross-country airplane race for women, which covers a course of 2500 miles. She is a member of the 99's (International Organization of Women Pilots), the American Dietetic Association, and is Vice President of the Varney Chemical Corporation, Janesville, Wis.

RETIRED

Colonel Frank H. Van Wagoner, MC, retired from the Army on July 1 and has taken a position as Medical Director of the R. E. Thomason General Hospital, El Paso, Texas.

Colonel Van Wagoner, a graduate of the Medical College of Northwestern University, is certified by the American Board of Surgery, and serves on the Board of Governors of the American College of Surgeons.

JOINS ABBOTT LABORATORIES

Dr. Harold D. Kautz, who has been secretary of the Council on Drugs of the American Medical Association, has joined the Medical Department of Abbott Laboratories, Chicago, as Director of the Division of Product Information.

From 1942 to 1946, he served with the U. S. Army Medical Corps as Chief of the 67th Station Hospital Laboratory and in the same capacity with the 93rd Station Hospital in Africa.

DIRECTOR PUBLIC RELATIONS, PD & CO.

Colonel John A. MacCartney, MSC, USAR, has been appointed director of public relations for Parke, Davis and Company, Detroit.

Colonel MacCartney served with the Army during World War II. He served in the Surgeon General's Office before attending the Naval School of Military Government at Princeton. He was trained for duty in the Far East and learned the Japanese language. He served with the 77th Infantry Division in the Philippines and in Okinawa. Later he served as Chief of Medical Supply in Korea.

RECEIVES PLAQUE

Colonel Roland I. Pritikin, MC, USAR, was awarded a bronze plaque recently by Lions International (Rockford, Ill., Chapter) for community service for the needy blind and partially sighted. This is an honor given to non-members, and only rarely.

Navy

Surgeon General—REAR ADM. BARTHOLOMEW W. HOGAN

Deputy Surgeon General—REAR ADM. EDWARD C. KENNEY

ADDITIONAL ASSIGNMENT

Captain Frank T. Norris, MC, USN, has been assigned the additional duty as the Assistant for Personnel Control and Planning, Bureau of Medicine and Surgery. This is in addition to his present duty as Head, Medical Corps Branch.

ASSIGNMENT TO BUMED

Lieutenant Francis R. Bobek, MSC, USN, was recently assigned to the Bureau of Medicine and Surgery in the Peacetime Logistics Planning Section.

Lieutenant William E. McConville, MSC, USN, has been assigned to the Appropriation Accounting Branch, Comptroller Division, Bureau of Medicine and Surgery.

APPOINTED MEDICAL CONSULTANT

Captain Earland E. Hedblom, MC, USN, has been appointed a medical consultant to the Arctic Institute of North America. He is Head of the Department of Cold Weather Medicine at the Naval Medical School, National Naval Medical Center, Bethesda, Md. He is also medical advisor to OPERATION DEEP FREEZE, Cold Weather Medicine Advisor to the Commandant, U. S. Marine Corps, and Navy member of the National Board for Promotion of Rifle Practice.

RETIRED

The following officers of the Medical Corps of the Navy have been retired recently: Rear Admiral Walter R. James; Captains W. V. Clark, D. H. Davis, J. C. Early, Jr., G. H. Ekblad, H. H. Haight, G. A. Hopkins, E. T. Knowles, R. W. Murray, C. M. Parker, J. W. Rogers, H. W. Rose, V. C. Tipton, P. Vaughan, R. L. Weir, J. A. Grindell, N. S. Bigelow, and L. J. Pope.

Captain Macy G. Martin, DC, USN, was retired on July 1 with more than 31 years active service. The Martins will make their home at 6454 Lucente Drive, Jacksonville 10, Fla.

EXTENSION COURSE

Prosthodontics, Part I, NavPers 10763, a home study type of extension course in complete denture prosthesis is now available to dental officers of the U. S. Navy and Naval Reserve. The course is comprised of six assignments.

This is the fifth in a series of postgraduate level extension courses prepared by the

U. S. Naval Dental School to augment the continuing education program of the Naval Dental Corps.

Reserve dental officers may receive promotion and retirement points to be credited at the successful completion of each course or unit.

Application should be made through official channels to the Commanding Officer, U. S. Naval Dental School, National Naval Medical Center, Bethesda, Maryland.

AUTOMATED WAREHOUSE

Imagine driving up to a warehouse, putting a punched card in a machine, driving around to the other end of the warehouse and loading the supplies on to your truck!

Such an automated warehouse is being planned at the Bayonne New Jersey Naval Supply Center for 245,000 items. Initial units will start operating in November. A 1200 foot conveyor electronically operated will be used.

Rear Admiral Frederick L. Hetter, SC, USN, Commanding Officer of the Center said its installation can be justified on the grounds of increased production efficiency and economy.

Naturally there will be many problems that will have to be solved before there is complete automation but the start has been made and this pilot operation will serve as a model for extending the plans to other sections of the country.

MILITARY-MEDICO-DENTAL SYMPOSIUM

The Eleventh Annual Military-Medico-Dental Symposium will be held at the U. S. Naval Hospital, Philadelphia, Pa., October 19-21. The theme of the program will be "Recent Advances in Military Medicine."

Credit points for retirement for Reserve Officers of the Army, Navy, and Air Force will be granted.

There will be a special program for nurses and all nurses, graduate and student, are invited to attend. For further information on the nurses program write to: Commander Rita V. O'Neill, NC, USN, Chief, Nursing

Service, U. S. Naval Hospital, Philadelphia 45, Pa.

CHELSEA HOSPITAL RECEIVES \$1000

An appreciative wife, Ida Constantine, recently contributed \$1000 to the Chelsea Naval Hospital Welfare and Recreation Fund for the "fine care, kindness and consideration" given to her husband, the late Lieutenant Commander Basil G. Constantine during his long illness.

We can all imagine that this unexpected gift to the hospital gives great satisfaction to its staff. Even words of appreciation ease the travel over the rugged paths that medical personnel must take in the care of patients.

Air Force

Surgeon General—MAJ. GEN. OLIVER K. NIESS

Deputy Surg. Gen.—MAJ. GEN. JOHN K. CULLEN

NEW CHIEF MSC

Colonel Bernard Korn, USAF, MSC, has been appointed Chief of the Medical Service Corps, U. S. Air Force. He replaces Colonel



U. S. Air Force Photo

COL. BERNARD KORN, USAF, MSC

Leonard P. Zagelow who has been reassigned to the Fifth Air Force in Japan.

A native of Brooklyn, New York, Colonel Korn received his Bachelor of Science (Pharmacy) degree in 1938 from Columbia University. He entered on active duty by direct commission in March 1939. During the latter part of World War II he was Executive Officer to the Base X Surgeon in Manila for a short time and then assumed command of the PHILRYCOM medical depot for approximately two years.

He was Chief, Materiel Standards Division, Armed Services Medical Procurement Agency when that agency was at 84 Sands Street, Brooklyn. Recently, prior to his present assignment, he was Director of Plans, Staffing, and Hospitalization for the Surgeon, Pacific Air Forces.

VACCINIA IMMUNE GLOBULIN

One thousand units of blood were recently collected by the 3790th USAF Epidemiological Laboratory from recruits at Lackland Air Force Base, Texas. These recruits had all been vaccinated for smallpox within the previous 21 days and all had a primary reaction to vaccination.

The blood was immediately processed into gamma globulin by the American Red Cross. This vaccinia immune globulin (VIG) is used for the treatment of vaccination complications and for the administration to unvaccinated persons known to have been exposed to smallpox.

Dr. C. Henry Kempo, University of Colorado Medical Center, an original worker in this field, and six other scattered American Red Cross volunteer consultants handle this VIG. The volunteer consultant for the Armed Forces is Lt. Colonel Abram S. Benenson, MC, Director Division of Immunology, Walter Reed Army Institute of Research, Washington.

ENVIRONMENTAL LIFE CELL

The Air Force Aeromedical Field Laboratory at Holloman Air Force Base, New Mexico, has an environmental life cell. The



ENVIRONMENTAL LIFE CELL

system, which is completely closed, recently completed a successful 100-hour capability test. It is designed for more than 200 hours capability and is to be used in tests involving chimpanzees and other small primates.

Public Health Service

Surgeon General—LEROY E. BURNEY, M.D.
Deputy Surg. Gen.—JOHN D. PORTERFIELD, M.D.

RECENT PUBLICATIONS

Highlights of Research Progress in Allergy and Infectious Diseases 1959 (PHS Publ. No. 745) is a 53-page booklet containing items of interest on Research studies conducted and supported by the National Institute of Allergy and Infectious Diseases of the National Institutes of Health, Bethesda, Md. Sells for 25¢ a copy.

Heart Conditions and High Blood Pressure (PHS Publ. No. 584-B13). Price 30¢.

Peptic Ulcers—reported in interviews (PHS Publ. No. 584-B17). Price 25¢.

Acute Conditions—incidence and associated disability (PHS Publ. No. 584-B18). Price 30¢.

Children and Youth, Selected Health Characteristics (PHS Publ. No. 584-C1). Price 35¢.

The Hawaii Health Survey (PHS Publ. No. 584-C3). Price 40¢.

Cooperation in Health Examination Surveys (PHS Publ. No. 584-D2). Price 35¢.

Population Characteristics and Participation in the Poliomyelitis Vaccination Program (PHS Publ. No. 723). Price 30¢.

Above may be obtained from the Superintendent of Documents, Government Printing Office, Washington 25, D.C. Send check or Money Order.

NEW FILMS

Leptospirosis (M-329), motion picture, 16 mm., color, sound, 596 feet, 16½ min. This is for veterinarians, physicians, bacteriologists, public health personnel, and university and college students.

Ticks and Tick-Borne Diseases (M-346), motion picture, 16 mm., color, 691 feet, 19 minutes. For audience: public health workers, doctors, nurses, students, veterinarians, and sanitarians.

The Infectious Diarrheas (M-373), motion picture, 16 mm., color, sound, 542 ft., 15 min. Audience: state and local health departments, nurses, sanitarians, courses in personal and community hygiene.

High-Temperature Short-Time Pasteurization (M-391), motion picture, 16 mm., color, sound, 907 ft., 25 min.

Short-term loans may be arranged for through Communicable Disease Center, Atlanta 22, Georgia.

COSTEP

One hundred and twenty-three students received training during the summer under the Public Health Service's Commissioned Officer Training and Extern Program (COSTEP). They were medical, dental, engineering, science, nurse and veterinary students from 61 four-year professional schools. Such assignments are open to students interested in careers in the Commissioned Corps of the Public Health Service.

Under COSTEP the assignments may be made at the National Institutes of Health,

Bethesda, Md., the Communicable Disease Center, Atlanta, Ga., Public Health Service hospitals, and in field public health activities.

APPOINTMENTS

Dr. Joseph H. Gerber has been appointed as Director of the Center for Aging Research, National Institutes of Health.

The program of the Center, established in 1956, is aimed at bringing research in the biological, psychological, and social sciences to bear upon the phenomenon of aging through support by the training and research grant programs of the Division of General Medical Sciences and other Institutes of the National Institutes of Health.

Sanitary Engineer Director O.C. Hopkins has been appointed as Deputy Chief of the Division of Water Supply and Pollution Control. He succeeds Arve H. Dahl who has been assigned to a course of training at the Industrial College of the Armed Forces, Washington.

Dr. Clarence A. Smith has been appointed as Chief, Communicable Disease Center, Atlanta, Georgia. His rank is Assistant Surgeon General. He succeeds Dr. Robert J. Anderson who was recently appointed Deputy Chief of the Bureau of State Services.

Dr. Smith, a native of Gambier, Ohio, is a graduate of the University of Colorado Medical School. His entire professional career has been spent in the Public Health Service. Since 1957 he has been Deputy Chief of the Communicable Disease Center.

SHORTAGE OF RADIOLOGICAL HEALTH SPECIALISTS

In an effort to reduce the nationwide shortage of radiological health specialists the Public Health Service called a meeting in Princeton, New Jersey, August 2. Representatives of universities, professional societies and government health agencies attended.

Surgeon General Burney said these specialists are needed in connection with the rapid expansion of the use of atomic energy, the increasing use of X-ray and other radi-

ation sources in the healing arts and in industry.

APPLIED EPIDEMIOLOGY COURSE

The Communicable Disease Center, Atlanta, Georgia, will offer a course in Applied Epidemiology, November 14-18. The course is designed primarily for physicians who serve as investigators of disease outbreaks or have administrative responsibility for such investigations.

Further information and application forms may be obtained from: Chief, Communicable Disease Center, Atlanta 22, Ga., Attention: Chief, Training Branch.

CONFERENCE OF PUBLIC HEALTH VETERINARIANS

The Conference of Public Health Veterinarians will hold its 1960 scientific sessions, and a Dinner Session and Business Meeting, in conjunction with the Annual Meeting of the American Public Health Association in San Francisco.

Dr. Robert K. Anderson, President, urges all veterinarians interested in public health to attend the complete Conference program. Dr. Anderson is presently Professor of Veterinary Bacteriology and Public Health in the College of Veterinary Medicine, and the School of Public Health, University of Minnesota. He is also Chairman of the AVMA Section on Public Health and Regulatory Medicine.

Colonel Mervin B. Starnes of the Walter Reed Army Institute of Research is President-Elect of the Conference.

GRANTS FOR RESEARCH IN AGING

Through the National Institutes of Health 33 grants totaling \$842,531 were recently made for research in aging.

Work will be supported in the biological, psychological, and sociological aspects of aging, including the specific fields of physiology, histochemistry, genetics, and morphology. Certain of the grants also will support studies on clinical problems of aging, including rehabilitation.

Veterans Administration

Chief Medical Director—WILLIAM S. MID-

DLETON, M.D.

Deputy Chief Med. Dir.—H. MARTIN EN-

GLE, M.D.

APPOINTMENTS

Dr. Robert C. Parkin of Madison, Wisconsin, has been appointed in the Veterans Administration Central Office, Washington, as Chief of Professional Training Services. He has been assistant dean in charge of postgraduate medical education at the University of Wisconsin School of Medicine for the past 11 years.

During World War II, Dr. Parkin served in the European Theater as collecting company commander with the 90th Infantry Division of the Third Army. He was awarded the combat medic's badge.

Dr. Marjorie P. Wilson has been advanced to the newly created position of Assistant Director of Education Service in the Veterans Administration Department of Medicine and Surgery, Washington.

CORRECTION

The article, "Team Planning in the Veterans Administration," June 1960, carried the name of the author as Cecilia H. Haug, R.N. The correct spelling of the name of the Director of the Nursing Service of the Veterans Administration is *Hauge*.

HONORED

Mrs. Isabelle Dubar, Chief, Dietetic Service, Veterans Administration Hospital, Fort Lyon, Colorado, was named the Outstanding Officer of the Year at an awards banquet of the 9767th Air Force Reserve Squadron, 10th Air Force, Pueblo, Colorado. She had been an instructor for Detachment #2, a duty that she will have again next year.

PSYCHOLOGIST POSITIONS

A new Civil Service examination is open for filling psychologist positions in Veterans Administration installations throughout the

United States and in Puerto Rico. These positions will pay from \$4,560 to \$13,730 annually.

Applicants must have completed all the requirements for the doctoral degree. Private practice in the field of psychology will not be credited in the examination.

Further information may be obtained from the Central Board of U. S. Civil Service Examiners, Veterans Administration, Washington, D.C.

ARTIFICIAL LIMBS

A new concept in artificial limbs for below-knee amputees has been conditionally approved by the Veterans Administration after three years of testing and improvement.

The new lightweight prosthesis was developed under sponsorship of the Veterans Administration with the cooperation of the artificial limb industry. The University of California at Berkeley coordinated the efforts of a group of prosthetists from the limbfitting profession and a number of research investigators from the artificial limb program, supported by the VA and other agencies.

The thigh corset and steel knee joints, previously considered necessary for support, are eliminated, as the amputee regains reliance upon his own knee control.

The limb is suspended by a small leather cuff or band buckled just above the knee. The hard, sometimes irregularly fitting, wooden socket is replaced with a closed-end plastic socket having a liner of leather and rubber which is fitted to provide total contact with the stump. The socket is flared under the knee-cap to permit additional weight bearing on the patellar tendon. This overall distribution of weight actually is more comfortable to the wearer.

The Veterans Administration cautions that prescription of the limb will remain on a limited, selective basis until the techniques have been further proved. Clinics must refer all requests for such legs to the Central Office of the Veterans Administration in Washington.

Miscellaneous

DIRECTORY OF BLOOD FACILITIES

A new *Directory of Blood Transfusion Facilities and Services* has been released by the Joint Blood Council, Inc., Washington, D.C.

This, the second such directory, describes 3,779 blood transfusion facilities of the United States. Coded also are such services as eye banks, bone banks, and skin banks. The price of the directory is \$2.50 a copy.

The Joint Blood Council was formed five years ago by the American Association of Blood Banks, the American Hospital Association, the American Medical Association, the American Red Cross, and the American Society of Clinical Pathologists. The president of the Council is Dr. LeRoy E. Bates of Baltimore, and the executive vice president is Dr. Frank E. Wilson. The headquarters is located at 1832 M Street, N.W., Washington 6, D.C.

CIVIL DEFENSE CONFERENCE

The Ninth U. S. Civil Defense Council Conference (Medical-Health Section) will be held September 21-22 at Leamington Hotel, Minneapolis, Minn. Further information may be obtained from the conference Chairman, Walter P. Halstead, 3524 Hennepin Avenue South, Minneapolis.

PG COURSE—CANCER AND THE INTERNIST

The American College of Physicians will conduct a postgraduate course, "Cancer and the Internist—1960 Concepts," at the Memorial Sloan-Kettering Cancer Center, October 10-14, New York. Arrangements should be made with the College, 4200 Pine St., Philadelphia 4, Pa.

BIOANALYST BOARD

The First annual meeting of the American Board of Bio-Analysts was held June 22, 1960, at the Hotel Carillon, Miami Beach, Florida. At which time, Diplomate were granted to, Rear Admiral Charles W. Letcher, MC, USNR; Roy G. Holly, M.D.,

Ph.D., Professor, University of Nebraska School of Medicine; and Frank H. Roth, Ph.D., Associate Professor, University of Miami. Dr. Roth was appointed to the Office of Associate Regent Examiner in mycology.

An Associate classification was established which will include those actively engaged in medical research activities, who at the present time do not meet the rigid qualifications necessary for certification as a Diplomate. This classification will allow for their active participation in semi-annual or annual scientific seminars.

Recently, additional appointments to Officer of the Board, Associate Regent Examiner, were made to include the following medical research scientists: Lester J. Schultz, Ph.D., Victor E. Levine, M.D., Ph.D., N. R. Bouziane, M.D., Ph.D.; Israel Hanenson, M.D., Alfred M. Pommer, Ph.D., Clarence H. Vann, B.A., M.D., Maurice Bender, Ph.D. and Vernon R. Fenwick, M.D.

Information concerning the American Board of Bio-Analysts may be obtained by writing, William H. Krieger, Secretary, 546 Crescent Ave., Greenville, S.C.

MEETING

The 32nd Annual Meeting of the American Association of Medical Record Librarians will be held at the Olympic Hotel, Seattle, Washington, October 10-13. Further information may be obtained from the Executive Office, at 840 North Lake Shore Drive, Chicago 11, Ill.

DOCTOR OF NURSING DEGREE

Boston University has established a Doctor of Nursing Science degree, the first doctorate in the country which specifically identifies nursing in the degree title.

The first doctoral offering is in psychiatric nursing, with programs in other clinical areas to be instituted in the next two to four years.

Financial support for the establishment of this program has been granted to the University by the National Institute of Mental Health.

UROLOGY AWARD

The American Urological Association offers an annual award of \$1000 (first prize of \$500, second prize \$300, and third prize \$200) for essays on the result of some clinical or laboratory research in Urology. Competition is limited to Urologists who have been graduated no more than ten years, and to hospital interns and residents doing research work in Urology.

Further information may be obtained by writing to the Executive Secretary, 1120 North Charles St., Baltimore, Md.

GOVERNMENT PUBLICATIONS

Dental Technician Prosthetic (Navy Training Course)	\$2.00
No. D208:11:D 43/59	
Selected Articles on Nursing Homes	1.50
No. FS 2.2:N 93/43	
Physicians for Growing America (Report of Consultants)	.60
PHS Publ. No. 709/59	
Sampling Microbiological Aerosols	.45
PHS Publ. No. 686/59	
Civil Defense Against Biological Warfare	.20
No. FCD 1.6/3:11-10	
Corner Room Shelter for Family Protection in an Atomic Attack	.10
FCD 1.2: sh 4/3	

Above may be ordered from the Superintendent of Documents, Gov't. Printing Office, Washington 25, D.C. Send check or money order.

WHO PUBLICATIONS

Insecticide Resistance & Vector Control	\$1.00
TR 191/60	
Expert Committee on Biological Standardization	.60
TR 187/60	
Guide to Hygiene & Sanitation in Aviation	.60
Preventive Aspects in Teaching of Pathology	.30
TR 175/59	

Epidemiology of Cancer of the Lung	.30
TR #192/60	
Polio-Trachoma-Malaria	.30
WHO Chronicle	
Teacher Preparation in Health Education	.30
TR 193/60	

Above may be obtained from Columbia University Press, International Document Section, 2960 Broadway, New York 27, N.Y.

MILLION TIMES MAGNIFICATION

An electron microscope which produces clear pictures of objects magnified more than a million times has been produced by Associated Electrical Industries of Great Britain.



BERTRAM RICHARDSON (left) and JOHN A. REYNOLDS look into electron microscope.

NEW DRUG INFORMATION AND PRECAUTIONS

The Food and Drug Administration is proposing that steps be taken to give physicians adequate information about drugs they prescribe and to insure that they are advised about any reactions that might be expected and any contraindications to their use. Many pharmaceutical firms have been doing this but it has never been required. Now the

proposal is that the procedure will be required in packaging and introducing the new items to the profession.

Commissioner of Food and Drugs, George P. Lerrick, said: "The large number of new medications has made it increasingly difficult for doctors and pharmacists to keep adequately informed about them. We are hopeful that the proposed regulations will improve the communication of vitally necessary information and bring about a general improvement in drug promotion practices. At the same time, they should furnish a basis for more effective government control when necessary."

September 22 is the final date for submitting comments.

DRUG INDUSTRY RESEARCH EXPENDITURE

The prescription drug industry spent \$197 million on research in 1959. That was 16 percent higher than in 1958. The amount for 1959 was 7.8 percent of the companies' pharmaceutical sales of more than \$2.5 billion.

Dr. Austin Smith, president of the Pharmaceutical Manufacturers Association said, the expenditure is "a typically American example of the force of private enterprise at work for the betterment of humanity."

Over \$18 million of the total amount was spent outside of pharmaceutical house laboratories in the form of grants and contracts to medical schools, hospitals, research institutes and other institutions.

An estimated 100,200 chemicals, compounds and other substances were prepared, obtained and biologically tested by the industry in 1959. Of these substances, 36,600 were in the field of cancer chemotherapy.

It is estimated that \$214 million will be spent by the ethical drug industry in 1960 for research.

A recently published booklet, "The Better Life," which graphically presents many facts about drugs and the drug industry is available at no cost from the Pharmaceutical Manufacturers Association, 1411 K Street, N.W., Washington 5, D.C.

POLISH CLAIMS

Under the Polish Claims Agreement of 1960 United States citizens or business organizations who are eligible will share in the \$40 million Polish Claims Fund.

Claimants must have sustained property losses as a result of: (1) Nationalization or other taking of their property; (2) Appropriation or loss of use of enjoyment of property under Polish laws, decrees, or other measures restricting or limiting rights and interests in property, and; (3) Debts owed by enterprises which have been nationalized, or which were a charge upon property so nationalized, appropriated, or otherwise taken.

Claims must be filed with the Foreign Claims Settlement Commission, Washington 25, D.C., by September 30, 1961.

TIDES

Life is full of fears. We now must fear that when the Russians reach the moon they will upset the schedule of the tides.

Honor Roll

Dr. Warren Witus

Lt. Col. Myrtle N. Quamen, USAF, NC

Col. Leonard P. Zagelow, USAF, MC

Timothy A. Lamphier, M.D.

Col. Max Magnes, MC, NJ, NG

H. D. Groves, Surg, USPHS R

Lt. Col. Joseph Hirsh, MSC, USAR

Col. Robert H. Ivy, MC, USAR Ret.

Major Rafael Roman Pineda

Dr. A. B. C. Knudson

Brig. Gen. Carl W. Tempel, MC, USA

LCDR. Margaret W. MacKay, NC, USNR

Lt. Col. Edward A. Barrett, MC, USAR

Col. W. G. Kostecki, USA, MC

Major Robert H. Quinn, Chief, Prev. Med.

Sec.

Capt. Edward Johnson, USAH

Lt. N. G. Skaperdas, DC, USNR

Col. Wilbur Smith, USAFR

Lt. Charlotte Stone, NC, USNR

Cdr. Burdette Blaska, NC, USN

Phar. Dir. George F. Archambault,
USPHS
Cdr. Mary C. Grimes, NC, USNR
Capt. Marjory May, ANC, USAR
Lt. Col. Charles G. McCausland, AUS, Ret.
Cdr. Alberta Burk, NC, USN
Lt. Joseph P. O'Connell, MC, USN
Major John Hartly Moore, MC, MY, ANG
Dr. John L. Spencer, Ph.D.
Cdr. Maude Akerly, NC, USN
Rear Admiral Richard A. Kern, USNR,
Ret.
LCDR. Rita H. Walmsley, NC, USN
Cdr. Mary T. Sproul, MSC, USN
Brig. Gen. Floyd L. Wergeland, MC, USA
Major Della H. Raney, ANC
Col. Harold Glascock, Jr., MC, USA
Comdr. Calvin F. Johnson, MSC, USN

New Members

Sr. Surg. Theodore L. Marks, USPHS
Capt. Morris A. Schultz, USAF, MC
1st Lt. James A. Walmsley, USAF, MC
Harry Allen, M.D.
Lt. Ralph J. Langsjoen, MC, USN
Capt. Murray Ross, DC, USAF
Lt. Charlotte R. Stone, NC, USN
Capt. Joseph J. Legan, DC, USAF
LCDR. Ruth M. Burney, NC, USNR
Capt. Lorraine M. Robinson, NC, USAF
Capt. James Louis Schamadan, MC, USA
LCDR Lenore Simon, NC, USN
Lt. Laura D. Spence, NC, USN
Lt. Homer R. Campbell, Jr., DC, USNR
Col. Alexander Miller, MC, USA, Ret.
Lt. Richard R. Ryan, MC, USN
LCDR Lydia Steinert, NC, USNR
Ens. Frederica Altstaetter, NC, USNR
LCDR. Catherine J. Crane, NC, USN
LCDR. Ruth M. Pojeky, NC, USN
LCDR. Opal V. Weakley, NC, USN
LCDR. Helen V. Vitzkievitch, NC, USN
Lt. Louis D. Hightower, Jr., MSC, USNR
LCDR. Lindsay C. Getzen, MC, USN
Major Robert Straussberg, DC, NJNG

LCDR. Dorothy C. Tidwell, NC, USN
LCDR. Audrey J. Tryon, NC, USN
Lt. Ruth E. Anthony, NC, USN
LCDR. Helen Louise Brooks, NC, USNR
LCDR. Clara Katherine Buehler, NC, USN
Lt. Evelyn M. DeMarco, NC, USN
LCDR. Roberta E. Perron, NC, USN
Med. Dir. John M. Buchness, USPHS
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LCDR. Marjory C. Redding, NC, USN
LCDR. Edna Scheips, NC, USN
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LCDR. Sophia Podosek, NC, USN
LCDR. Dellabelle Herbert, NC, USN
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Major Leonard Berlow, USAF, MSC
Major Miguel J. Bautista Gonzalez, MC
LCDR. Christine A. Fritch, NC, USN
Lt. (jg) Mary M. Henne, NC, USNR
Lt. Frederica S. Roach, NC, USN
LCDR. Norma J. Thompson, NC, USN
LCDR. Mary E. Gillen, NC, USNR
Lt. Col. John Dobronte, Jr., DC, NJARNG
Lt. Larry G. Dickson, MC, USN
Capt. Jay M. Hill, MC, USA
Major Luis Benitez Bribiesco, MC
Major Eugenio L. Flamand, MC
Major Maime A. Heyser, MC
Robert D. Phillips, M.D.
S. Evert Svenson, M.D.

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Army
Lt. Col. Nathan Cooper, U. S. Air Force,
(MSC)
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tration

NEW BOOKS

Books May Be Ordered Through The Association

- Remington's Practice of Pharmacy*, Mack Publishing Co., Easton, Pa. Price \$22.50.
- Husa's Fifth Edition Pharmaceutical Dispensing*, Mack Publishing Co., Easton, Pa. Price \$12.00.
- The Older Patient*, Edited by Wingate M. Johnson, M.D., Paul B. Hoeber, Inc., Publisher, New York 16, N.Y. Price not stated.
- Dictionary of Visual Science*, Max Schapero, David Cline and Henry Wm. Hofstetter, Chilton Company, Philadelphia 39, Pa. Price \$15.00.
- Psychotherapists In Action*, Hans H. Strupp, Grune & Stratton, Inc., Mayfair, London. Price \$8.75.
- Amerika Samoa: A History of American Samoa and Its U.S. Naval Administration*, Capt. J. A. C. Gray, MC, USN, United States Naval Institute, Annapolis, Md. Price \$6.00.
- MOS 1542*, John C. Angier, III, Greenwich Book Publishers, New York 17, N.Y. Price \$2.50.
- Attenuated Infection*, Harold J. Simon, M.D., Ph.D., J. B. Lippincott Co., Philadelphia 5, Pa. Price \$10.00.
- Vision of the Aging Patient*, Monroe J. Hirsch and Ralph E. Wick, Chilton Book Co., Philadelphia 39, Pa. Price \$7.50.
- Leukaemia*, F. G. J. Hayhoe, M.A., M.D., M.R.C.P., Little, Brown & Co., Boston 6, Mass. Price \$16.00.
- The Office Assistant*, Portia M. Frederick and Carol Towner, W. B. Saunders, Philadelphia, Pa. Price \$5.25.
- Recent Advances in Clinical Pathology*, S. C. Dyke, D.M., FRCP, Little, Brown and Company, Boston, Mass. Price \$11.50.
- Recent Advances in Biological Psychiatry*, Joseph Wortis, M.D., Grune & Stratton, Inc., New York 16, N.Y. Price \$13.50.
- Injuries of the Brain and Spinal Cord and Their Coverings*, Samuel Brock, Springer Publishing Co., New York 10, N.Y. Price \$18.50.
- Epilepsy and Related Disorders*, Volumes 1 & 2, William G. Lennox, A.B., A.M., M.D., Sc.D. (Hon), with Margaret A. Lennox, A.B., M.D., Little, Brown & Company, Boston, Mass. Price per set \$13.50.
- Fundamental Aspects of Normal and Malignant Growth*, Wiktor W. Nowinski, D. Van Nostrand Co., Inc., Princeton, N.J. Price \$37.50.
- Bamboo Doctor*, Stanley S. Pavillard, St. Martin's Press, Inc., New York 10, N.Y. Price \$4.50.
- A Bibliography of Internal Medicine, Selected Diseases*, Arthur L. Bloomfield, M.D., University of Chicago Press, Chicago, Ill. Price \$6.00.
- Survival At Sea*, Lt. Comdr. G. W. R. Nicholl, O.B.E., Assoc. R.I.N.A., R.N., John De Graff, Inc., New York 3, N.Y. Price \$6.00.
- Manual of Blood Morphology*, Lydia Schudel, J. B. Lippincott Co., Philadelphia 5, Pa. Price \$4.50.
- Diseases of the Skin*, James Marshall, M.D., The Williams & Wilkins Co., Baltimore 2, Md. Price \$15.00.
- Gastric Cytology*, Principles, Methods and Results. Rudolf Otto Karl Schade, M.D., The Williams & Wilkins Co., Baltimore 2, Md. Price \$8.00.
- Manual of Histologic and Special Staining Techniques*, Second Edition, Armed Forces Institute of Pathology, McGraw-Hill Book Co., Inc., New York, N.Y. Price \$5.50.
- Clinical Orthopaedics*, #16 "The Foot," Anthony F. DePalma, M.D., Ed.-in-Chief, J. B. Lippincott Co., Philadelphia, Pa. Price \$7.50.
- Current Surgical Management II*, John H. Mulholland, M.D., Edwin H. Ellison, M.D., Stanley S. Friesen, M.D., W. B. Saunders Co., Philadelphia, Pa. Price \$8.00.
- Office Diagnosis*, Paul Williamson, M.D., W. B. Saunders Co., Philadelphia, Pa. Price \$12.50.
- Differential Diagnosis of the Electrocardiogram* Arbeit, Rubin, & Cross, F. A. Davis Company, Philadelphia, Pa. Price \$10.50.
- Bone X-Ray Diagnosis*, Simon, F. A. Davis Company, Philadelphia, Pa. Price \$10.50.
- Dictionary of Abbreviations in Medicine*, Steen, F. A. Davis Company, Philadelphia, Pa. Price \$2.50.
- P-Q-R-S-T, A Guide to Electrocardiogram Interpretation*, Joseph E. F. Riseman, M.D., The Macmillan Company, New York, N.Y. Price \$6.50.
- Essays on The First Hundred Years of Anaesthesia*, W. Stanley Sykes, M.B.E., M.B., B.Chir. (Contab.), D.A., The Williams & Wilkins Co., Baltimore, Md. Price \$7.00.
- Bedside Diagnosis*, Charles Seward, M.D., F.R.C.P., Edin.), The Williams & Wilkins Co., Baltimore, Md. Price \$6.00.
- Collected Papers of the Mayo Clinic and The Mayo Foundation*, W. B. Saunders Company, Philadelphia, Pa. Price \$14.00.
- Help Bringers: Versatile Physicians of New Jersey*, Fred B. Rogers, M.D., Vantage Press, Inc., New York, N.Y. Price \$2.95.
- Industrial Pulmonary Diseases*, Edited by E. J. King, M.A., D.Sc., F.R.I.C., and C. M. Fletcher,

C.B.E., M.D. (Contab.), F.R.C.P., Little, Brown and Company, Boston, Mass. Price \$8.50.

Medical Physiology and Biophysics, Edited by Theodore C. Ruch, Ph.D., and John H. Fulton, M.D., W. B. Saunders, Co., Philadelphia, Pa. Price \$16.00.

Diseases of the Newborn, Alexander J. Schaffer, M.D., with a Section On Neonatal Cardiology by Milton Markowitz, M.D., W. B. Saunders Co., Philadelphia, Pa. Price \$20.00.

Pediatric Nursing, Gladys S. Benz, R.N., M.A., The C. V. Mosby Co., St. Louis, Mo. Price \$6.00.

Oral Pathology, Kurt H. Thoma, D.M.D., Dr. Med. Dent. h.c. (Zurich); F.D.S., R.C.S. (Eng.); Hon. F.D.S.R.C.S. (Edin.); F.A.C.D., and Henry

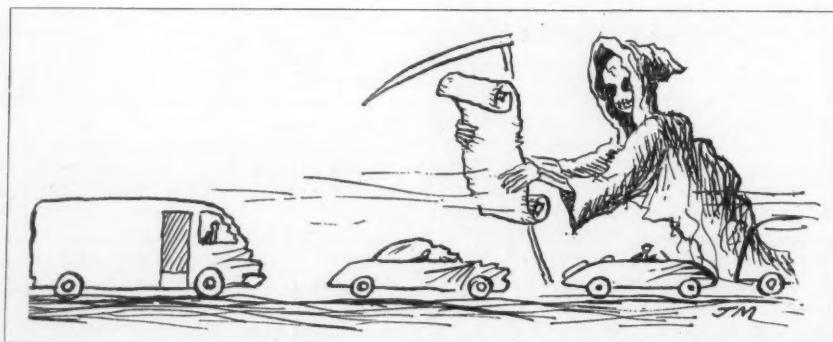
M. Goldman, D.M.D., F.A.C.D., The C. V. Mosby Co., St. Louis, Mo. Price \$27.50.

Medical Helminthology, J. M. Watson, D.Sc., (Lond), A.R.C.S., The Williams & Wilkins Co., Baltimore, Md. Price \$15.50.

Surgical Errors and Safeguards, 5th Edition, Max Thorek, M.D., J. B. Lippincott Co., Philadelphia, Pa. Price \$25.00.

The Principles and Practice of Medicine, Sir Stanley Davidson, B.A. Contab., M.D., F.R.C.P. Edin, F.R.C.P. Lond., M.D. Oslo, F.R.S., Edin, The Williams & Wilkins Co. Baltimore, Md. Price \$8.00.

Practical Clinical Management of Electrolyte Disorders, William J. Grace, Appleton Century Crofts, Inc., New York, N.Y. Price \$4.95.



BOOK REVIEWS

HISTORY OF THE AMERICAN DIETETIC ASSOCIATION, 1917-1959. Edited by Mary I. Barber. 328 pp., illustrated. J. B. Lippincott Company, Philadelphia. Price \$6.00.

The *History of the American Dietetic Association* shows the expansion of that association from the first "Dietitians Conference" in 1917, which was attended by 98 persons, through 1959 when the membership was approximately 14,000.

The areas covered in the book include Community Nutrition, Diet Therapy, and Food Administration. The Education Section is of particular interest to schools, hospitals, and persons who wish to become acquainted with the approved program of dietetic internships and the establishment of the educational standards required by ADA. The international relations existing among the dietitians of the United States and those of foreign countries show the cooperation and exchange of ideas and standards.

There is a section on the history of the dietitians in the military services. This is illustrated and shows the changes in uniforms, tells of the progress and contributions made during World Wars I and II, and of the expansion to other fields, such as research.

The work of the dietitians in non-military government services such as the Veterans Administration and the U.S. Public Health Service is important and has been set down in an interesting manner.

Public relations have played a part in pointing out the prestige of the Association and the work of the dietitians in various fields. The concluding portion with aspects of the Space Age to Dietetics should be of interest to all.

The book shows how the dietitians have proven themselves as administrators without losing sight of the patients and their need for diet therapy.

Maj. JOSEPHINE LYDON, AMSC

WORLD REVIEW OF NUTRITION AND DIETETICS. Edited by Geoffrey H. Bourne. 272 pp. J. B. Lippincott Company, Philadelphia and Montreal. Price \$12.00.

It is generally accepted that one of the major problems for workers in nutritional research, as in other sciences, is the lack of communication among investigators. In the United States this is particularly true in regard to the appreciation and understanding of contributions by workers outside of the English speaking communities. It is sincerely to be hoped that an annual journal of this

type will provide another step to narrow the gap between groups of investigators. This is the first volume of the series and contributions from the United Kingdom, United States, France, Japan, and Guatemala are included. Representation by five nationalities is not a criterion of value in itself, however, the reader will be able to perceive the merit of each article on a scientific basis.

The first article of the new series is appropriately one by E. V. McCollum on the history of nutrition. Other chapters include: the treatment and prevention of kwashiorkor, basal metabolism in the Japanese population, nutritional significance of vitamin B₁₂, nutritional factors in anaemia, neoplasia and nutrition, and the nutritional requirements of embryos and the repercussions of deficiencies.

Three discussions are presented which are not primarily concerned with dietary influences but which illustrate the interdependence of nutritional and biochemical studies. These include: the biosynthesis of vitamin C, effects of androgens and oestrogens on the metabolism of proteins and the growth of tissues, and the use of isotopes in nutrition research with special reference to tritium.

This reviewer looks forward with anticipation to the subsequent volumes of *The World Review of Nutrition and Dietetics*.

ROBERT VAN REEN, PH.D.

THE PROFESSIONAL SOLDIER. Morris Janowitz, Ph.D., University of Michigan. 464 pp. The Free Press of Glencoe, Illinois. Price \$6.75.

America's armed might should be shaped into a world-wide "constabulary force," based on the doctrine of graduated deterrence. This is the major conclusion of the author of this book. He defines the constabulary force in these terms: "It is continuously prepared to act, committed to the minimum use of force, and seeks viable international relations, rather than victory." Its duties could include policing an international agreement on the suspension of nuclear tests.

During the past 15 years, Janowitz notes, backers of "Massive Retaliation" have been dominant within the nation's top military elite. Those who favor a more flexible approach to the use of force have gained ground in the past five years.

Adoption of the "constabulary force" concept would require "radical" changes within the military profession. He predicts that on a long-term basis a completely professional military establishment

will emerge, replacing the present system of citizen military service. But Janowitz notes that "It is impossible—and even dangerous—to use monetary incentives alone as the basis for developing a professional military establishment. A sense of honor and esprit de corps are essential for any effective military organization."

At the peak of the professional military establishment, under civilian control, will be military "managers," individuals of broad experience and training equipped to coordinate several functions. Under them will be military "technologists"—those concerned with new weapons development—"heroic leaders," more traditional-type battlefield generals.

The Professional Soldier offers to the reader a careful and comprehensive description and assessment of the American military establishment; to the civilian this study should broaden his knowledge of the armed forces and increase his respect for that group; to the military the book gives an excellent analysis of the past fifty years, providing an understanding of the changes that have occurred in the political behavior of the American forces. The book points out the need for further changes and recommends a "constabulary force."

C. B.

PROGRESS IN NEUROLOGY & PSYCHIATRY, XIV.
Edited by E. A. Spiegel, M.D. Grune & Stratton, New York and London. Price \$12.00.

This year's volume, the fourteenth of the series, evaluates four thousand references. The four major divisions (Basic Sciences 125 pp., Neurology 215 pp., Neurosurgery 85 pp., and Psychiatry 210 pp.) are organized into thirty-six chapters. The book is well indexed and easy access to each paper reviewed is provided by key number and by alphabetical listing. Two errors in the Table of Contents ("Basic Sciences" is mislabelled "Neurology" and "Neurology" is mislabelled "Neurosurgery") are no real inconvenience. Dr. Spiegel says in his preface that "progress in the basic sciences has been perhaps more conspicuous than in the clinical disciplines . . . In the latter the interest has been aroused particularly in the action of a multitude of new drugs. While the long-range effects of this interest can hardly be predicted, it serves at least to stimulate the study of the biochemical aspects of nervous and mental disorders."

A readers' sampling of new, novel, or useful works might include Bucy's demonstration of the weaknesses of pyramidal-extrapyramidal tract concepts of the central nervous system and his suggestion that the terms be discarded to clear the way for a more accurate understanding of neural control of skeletal muscle activity.

Pasik, Pasik, and Bender present an excellent chapter on neuro-ophthalmology, including a description of the use of pseudo-isochromatic plates to de-

tect early changes in color vision in retrobulbar neuritis. Other papers on advances in the biochemistry of copper clarify the role of this element in hepatolenticular degeneration. Ceruloplasmin, postulated as a Cu binder in blood, is decreased in this disease with concomitant high levels in urine, cerebrospinal fluid, and various tissues including the glia. The chelating agent penicillinase has given better therapeutic result than dimercaprol (BAL) or calcium versonate.

Previous reports of elevated ceruloplasmin levels in schizophrenia have not been verified, and serious question has now arisen about the action of "tarazine." Among the neurological studies, Fänge *et al* have described autonomic innervation of the extraordinary avian nasal salt gland. Zigas & Gajdusek report on *kuru*, a new disease with chronic, progressive, heredofamilial and degenerative characteristics and parkinsonian symptomatology.

The limbic lobe studies of MacLean, the fundamental books of Wartenburg, "Neuritis, Sensory Neuritis, and Neuralgia," Baldwin and Bailey, "Temporal Lobe Epilepsies," and Wheelis, "The Quest for Identity," and the papers of Foulds on psychotherapy and Inman on "clinical thought-reading" merit special attention.

THOMAS H. LEWIS, M.D.

BIOPSY MANUAL. By James D. Hardy, M.D., James C. Griffin, Jr., M.D., and Jorge A. Rodriguez, M.D. 150 pp., illust. W. B. Saunders Co., Philadelphia and London. Price \$6.50.

This small manual compiled by three members of the surgical staff of the University of Mississippi School of Medicine serves a specific need of the practicing physician. As mentioned in the preface, the biopsy constitutes a basic step in the diagnosis and treatment of many disease entities and is indispensable in the management of tumors.

In an orderly fashion, the book describes the steps necessary to obtain the best possible specimen from nearly all areas and organs of the body. Both open and closed techniques are presented. Complications of biopsy procedures are very adequately mentioned. The diagrams are clear, concise, and almost self explanatory. The bibliography is quite inclusive and well up-to-date.

This manual will not only be a ready guide for the surgeon, but it will also bring to light for his colleagues in other specialties a fine instrument for more precise and rapid diagnosis.

LT. R. G. MUTH, MC, USN.

CANCER OF THE CERVIX. Diagnosis of Early Forms. Ciba Foundation Study Group No. 3. Edited by G. E. W. Wolstenholme, O.B.E., M.A., M.R.C.P.; and Maeve O'Connor, B.A. 114 pp. illust. Little, Brown and Company, Boston. Price \$2.50.

This small volume is a compilation of seven papers presented by scientists from Germany, Sweden, France, Great Britain, United States and Switzerland before a Study Group on "Cancer of the Cervix: Diagnosis of Early Forms" sponsored by the Ciba Foundation in May 1959.

The papers by Hamperl and by Kottmeier, Karlstedt, Santesson and Moberger are concerned with the histological diagnosis and the classification of carcinoma of the cervix. Hamperl's discussion is directed mainly to carcinoma *in situ*. Moricard and Cartier discuss cytological changes as seen under the optical and electron microscopes, which are indicative of cancer. Lawson presents a paper on the possibility of using the beta-glucuronidase or alpha-mannosidase in the vaginal fluid as a screening test for cancer of the cervix. At present the percentage of error is too high but the method bears further investigation. Kaufmann and Ober discuss morphological changes of the cervix with age and the location of carcinomas in the cervix at various ages. In younger women the carcinoma is usually on the portio surface and in older women it is usually in the cervical canal.

Younge and Kevorkian consider carcinoma *in situ* from the point of view of detection and therapy and Muller concludes with a brief note on the early histological changes in endometrial cancer.

All papers are well worth the attention of those concerned with uterine cancer, especially pathologists since much of the material relates to histopathology. Each paper is accompanied by a discussion which adds to the interest of the volume.

COL. HUGH R. GILMORE, JR., USA, RET.

CANCER AND ALLIED DISEASES OF INFANCY AND CHILDHOOD. Edited by Irving M. Ariel, M.D., and George T. Pack, M.D.; 27 contributing authorities. 605 pp., illustrated. Little, Brown and Company, Boston and Toronto. Price \$22.50.

Twenty-seven authors have contributed to this book which deals with the management of tumors in the younger age groups. Cancer is usually considered a disease of older age but it is the most frequent cause of death, exclusive of accidents, between the ages of five and twenty-four years.

The first chapter is a general discussion of pediatric oncology, including incidence, types of tumors, pathogenesis, differences and similarities between tumors of the child and of the adult and an appraisal of the results of treatment. The three following chapters are devoted to the general care of children being treated for tumors; the preoperative and postoperative care and the principles of radiation therapy. The remaining 19 chapters are devoted to the discussion of tumors of specific sites, such as tumors of the head and neck, the eye, breast, bone, central nervous system, soft tissues, etc. One chapter is on the subject of intestinal polyposis, another

on the reticuloendothelioses and another is devoted to a discussion of the anemia of cancer in childhood. An extensive discussion is presented on the subject of tumors and hyperplasias of the adrenal gland written by Meyer M. Melicow, M. D. The editors consider this chapter the finest treatise on this subject that has been written. The chapter on the leukemias and lymphomas includes a complete discussion of the latest chemotherapeutic agents.

Emphasis is on treatment, both radical and conservative. Operative technics are described as well as details of home and hospital care. The various authors also include paragraphs on incidence, etiology, pathology and symptomatology.

The book has many black and white illustrations which include photographs of patients and of operative procedures and photomicrographs. There are also numerous charts and drawings.

It is an excellent book for all doctors who are called upon to treat a child with a tumor.

COL. HUGH R. GILMORE, JR., USA, RET.

TUMORS OF THE CHEST. Diagnosis and Treatment.

Edited by David M. Spain, M.D. 371 pp., illustrated. Grune & Stratton, New York and London. Price \$14.75.

This is another volume of excellent composition dealing with diseases of the chest which has been sponsored by the American College of Chest Physicians. The Editorial Board has chosen authorities in their various fields who present both facts and experiences dealing with their subjects.

The contributors' interests and enthusiasms are evident throughout the volume and make this one of the most readable and enjoyable texts I have seen in some time.

Adequate documentation and illustrations with tables, photographs, surprisingly clear x-ray reproductions, for the most part, and photomicrographs, serve to highlight the various subjects. As in previous volumes sponsored by this organization, there are numerous references in bibliographies after each chapter.

Fully one-third of the book deals with a situation which Danish pathologist Clemmesen refers to as possibly "one of the major catastrophes in medical history", bronchogenic carcinoma. Experimental, etiological and epidemiological aspects of this disease which destroys the equivalent population of a fair sized city each year are delightfully presented in the opening chapters. The importance of early diagnosis in the face of today's treatment frustrations is well emphasized. The chapter on cytologic diagnosis of bronchogenic carcinoma should be read by every physician.

The scope of coverage of tumors less frequently seen is excellent. These chapters answer many questions for those interested in diseases of the chest.

The medical, radio-therapy and isotope techniques

employed in treatment of tumors of the chest are thoroughly covered. The physician who is responsible for the palliative or supportive care of patients with primary and metastatic chest tumors will find helpful guidance and specific means of management here.

For the non-specialist it serves as a very readable reference text which is likely to be used more often than most reference works. It is a volume that the chest specialist will certainly want in his library.

HENRY L. HOOK, M.D.

INTRODUCTION TO COLPOSCOPY. By Karl A. Bolten, M.D., and William E. Jaques, M.D. 76 pp., 53 illust. Grune & Stratton, New York and London. Price \$7.75.

This is an excellent presentation of a subject not well known in this country. Colposcope pinpoints pathologic areas of cervical epithelium, permitting spot biopsies; conization of the cervix for diagnostic purposes becomes unnecessary. With the aid of this monograph it is possible to become proficient in the use of colposcopy. This book with its excellent illustrations undoubtedly will be of interest to every gynecologist.

MICHAEL B. MONIAS, M.D.

THE OFFICER'S GUIDE. 25th Ed. A Ready Reference on Customs and Correct Procedures Which Pertain to Commissioned Officers of the U. S. Army. 485 pp., illust. The Stackpole Company, Harrisburg, Pa. Price \$6.00.

This 25th edition of a work which has become a standard reference for officers of all components of the Army exceeds in usefulness all previous editions. It has been modernized to provide practical guidance about all aspects of life within the dynamic environment of our "One-Army."

Succinctly written, it is a map which points the way from arrival at the first station to retirement or relief from active duty for both the short-term and the long-career officer. I can think of nothing which might affect an officer's career which has not been touched upon in this volume. The whole is made more useful by a comprehensive index. The medical service officer especially will want this book on his office shelf.

MAJ. SAMUEL L. CROOK, MSC, USA

NEWER VIRUS DISEASES. Clinical Differentiation of Acute Respiratory Infections. By John M. Adams, M.D., Ph.D. 292 pp. The Macmillan Company, New York. Price \$5.75.

In this book on virus diseases which includes the old as well as the new, plus bacterial, rickettsial, fungal, allergic, and other causes of respiratory disease, Dr. Adams has covered brilliantly a 1960 résumé of respiratory infection. Basic concepts of virology serve as an introduction, and the factors

of latency of virus infection, age effects, secondary infection, and virus interference are carefully explained. Clinical features, diagnostic procedures, both clinical and immunologic are well covered. Dr. Adams correlates well anatomic and pathophysiological considerations with practical points on therapeutic management.

Subsequent chapters discuss the epidemiology, clinical features, and laboratory aspects of the many viruses and other causative agents of respiratory diseases and the viral agents that attack the nervous system, enteric tract and other organs. Therapy, too, receives adequate coverage. The illustrations are most instructive, and there are three very worthwhile and practical appendices.

The author uses the metric system, including centigrade thermometry exclusively. This reviewer most heartily approves of this, as well as the most adequate alphabetical list of references at the end of each chapter, and the manner in which these references are cited in the text, i.e., the author's name and year of publication. However, in referring to blood counts, Dr. Adams erroneously uses milliliter (ml) which is analogous to cubic centimeter instead of microliter (μ l) which corresponds to cubic millimeter.

Dr. Adams has a penchant for the word "Spectrum" which is fundamentally incorrect since symptoms and signs are seldom chromatic. He, as well as the rest of us, should discard that term when speaking of symptoms, variations in disease patterns, or in describing antibiotic potentialities.

As a further criticism, this reviewer cannot accept the aphorism of Osler quoted by Dr. Adams, that a physician should teach his patients not to take medicine. Such a statement in Osler's time may have had great merit, but with the marvelous therapeutic agents available today it is my belief that Sir William would retract such a statement and not be so profound a therapeutic nihilist.

Despite the above criticisms Dr. Adams has written a very fine text. It should have great appeal to pediatricians, internists, preventive medical specialists, and military physicians since it contains excellent appraisals of many problems caused by viruses and allied agents of those diseases causing the greatest incidence of morbidity.

JULIAN LOVE, M.D.

CARDIAC AUSCULTATION, INCLUDING AUDIO-VISUAL PRINCIPLES. 2nd Revised and Enlarged Edition. J. Scott Butterworth, M.D., Maurice R. Chassin, M.D., Robert McGrath, M.D., and Edmund H. Reppert, M.D. Grune & Stratton, New York and London. Price \$6.25.

This monograph is a revised and enlarged second edition but is still comparatively short consisting only of 100 pages. The authors discuss basic principles of auscultation of the heart including the

physical principles of sound as they relate to heart sounds and murmurs. They also describe and discuss the present day use of audio-visual equipment and its usefulness in teaching the art of cardiac auscultation. They discuss in a concise and simplified manner the various types of heart disease and the murmurs and sounds that each type will produce. The discussions are well illustrated with phonocardiograms and pulse curve tracings. The timing of the various cardiac events such as valve opening and closing and ventricular contractions are exceptionally well illustrated by the diagram, Fig. 12 on page 31. This diagram also includes pressure curves and their relation to the electrocardiogram and the phonocardiogram.

In summary, this is a concise review of the basic fundamentals of heart sounds and auscultatory findings or the various diseases of the cardiovascular system. It is recommended especially for students who are beginning their study of the cardiovascular physiology of heart sounds and murmurs.

COL. D. O. LYNN, MC, USA

MEDICAL CARE OF THE ADOLESCENT. By J. Roswell Gallagher, M.D., and The Staff Physicians of The Adolescent Unit, Children's Hospital, Boston. 369 pp. Appleton-Century-Crofts, New York. Price \$10.00.

"Why should there be a book about the care of adolescents?" the author asks. Because adolescents are neither little children nor adults; because, as he hammers home, they have physiologic characteristics and ailments sufficiently peculiar that they need special attention and understanding. The teenager is terribly self-concerned, he strenuously pursues approval, he is physically changing from child to adult and is growing furiously. Evaluation and management of his medical and emotional disorders demands unique approach.

Drawing on his extensive experience as a school physician and later as Chief of the Adolescent Unit of the Children's Hospital Medical Center in Boston, Dr. Gallagher has produced a worthy book full of plain facts and sound advice. The specific diseases discussed are not covered in detail, the author assuming that the basic information is known to the reader. However, he takes pains to explain that the adolescent's response to a condition and consequently its management are different. Since this is the principal thesis of the work it is encountered with considerable repetitiveness.

There are introductory chapters on the office visit and history taking. Dr. Gallagher recommends a first interview with the parents alone. Subsequently a separate history is taken from the patient. It is vital to develop a strong individual relationship with him; treating him with respect and gaining his trust.

Adolescent growth and development are amply covered. A series of excellent photographs provides useful scales of physical and sexual maturity for boys and girls. Menstruation and related disorders, prominent concerns of puberal girls, are thoroughly discussed in four chapters. There is also emphasis on cardiac problems, thyroid disorders, physical fitness and emotional problems. The gamut of other major problems (There seem to be no minor ones where adolescents are concerned!) includes diabetes, enuresis, gynecomastia, obesity, pancreatitis, ulcerative colitis, undescended testis, acne, epilepsy, and scholastic failure.

There are selected references after each chapter and author-subject indices at the back of the book. The book is nicely clothbound, printed in large easily-readable type on heavy slick paper.

This book is an authoritative survey of a new medical field of interest. It is a plain-talking book full of understanding and wisdom. The author's primary concern is with the patient himself. He offers practical advice on management and largely omits controversy. It will not appeal to the biochemically-statistically minded. However, any physician who likes youngsters and desires to treat them more successfully will find rewarding reading.

MAJ. EDWARD J. TOMSOVIC, MC, USA

MAN IN A COLD ENVIRONMENT. By Alan C. Burton, Ph.D., and Otto G. Edholm, M.B. 273 pp., illust. The Williams & Wilkins Company, Baltimore, exclusive U. S. agents. Price \$6.25.

This little jewel is unique in its field, but like all gems it is small and quite expensive. As the diamond ring is to the happy engagement, however, this book is to the cold weather specialist. If the book contained no other information than the well organized and complete bibliography by chapter, by author index, and by subject index, Burton and Edholm have made a remarkable contribution to cold weather medicine. It should be found in all medical and basic science libraries.

The philosophical introduction "Homeothermy and History" is zoologic and anthropologic fun. This is followed by about one hundred pages of cybernetic thermodynamic physiology which is barbituric reading for the "explorer type" physician to whom the world of calculus usually means "stone," (and both commodities are equally insoluble in the body humours). This section will be most useful to the experimental biophysicist.

The last half of the book covering vascular and metabolic responses, acclimatization, hypothermia, local cold injuries, and future problems is a concise and complete review of the literature up to 1955. This Section has unquestionably accomplished much of the preliminary spadework for medical investigators working during the I.G.Y. and sub-

sequent polar research expeditions. The many difficulties in reaching sound conclusions in this field are nicely defined. As the book starts in a philosophic vein, fittingly it ends with the witticism, "Many are cold, but few are frozen."

CAPT. E. E. HEDBLOM, MC, USN

THE ANATOMY OF THE NERVOUS SYSTEM. ITS DEVELOPMENT AND FUNCTION. Tenth Edition. Stephen W. Ranson, M.D., Ph.D. Revised by Sam Lillard Clark, M.D., Ph.D. 622 pp., 434 illustrations, 11 in color. W. B. Saunders Company, Philadelphia and London. Price \$9.50.

That this is the tenth edition of one of America's standard text books of neuro-anatomy attests to its wide acceptance. The familiar format of the book, its brain section atlas and clinical correlation section remain unchanged. A number of illustrations have been added and portions of each chapter rewritten. Relatively little space is given to the current functional concepts in anatomy of the reticular formation and limbic systems. There are few texts, however, that present basic segmental and tract anatomy in a more lucid fashion. This will continue to maintain the book's popularity to graduates and undergraduates alike.

JAMES F. HAMMILL, M.D.

PRINCIPLES OF PUBLIC HEALTH ADMINISTRATION. 3rd Ed. By John J. Hanlon, M.S., M.D., M.P.H. 714 pp., illust. The C. V. Mosby Company, St. Louis. Price \$10.50.

This textbook, presently in the third edition, is published but ten years after the first edition. Such frequent revision is commendable and is demanded by the rapidly broadening span of knowledge coming within the purview of public health administration.

The text takes cognizance and interprets the changing social and behavior patterns as they affect the public health. The traditional services are discussed in the light of modern knowledge and applicable resources. References at the end of each chapter are current and provide the interested reader more extensive information on matters having particular interest for him.

The advent of nuclear energy with the many and varied civilian and military applications has created actual and potential environmental hazards which are permanent and profound. Protection of the worker in industry and the public in general is an obligation that must and will be accepted by public health agencies at all levels of government. In view of the present rather extensive knowledge and experience concerning nuclear energy as it affects the public health, a more complete treatment of the subject in a textbook would be desirable. Civil defense and the regulatory control of ionizing radiation are

presently the responsibility of several public health agencies and other study by numerous others.

The book, containing but few plates, is written in an interesting and pleasing style. Inclusion of historical and developmental material provides a desirable background for understanding present concepts of public health administration.

It can be recommended to the student and to the physician, nurse, engineer or other discipline interested in learning the principles of public health administration.

WILLIAM C. HARRISON, M.D., M.P.H.

SIGNIFICANT TRENDS IN MEDICAL RESEARCH. Ciba Foundation. Edited by G. E. W. Wolstenholme, O.B.E., M.A., M.B., M.R.C.P.; Cecilia M. O'Connor, B.Sc.; and Maeve O'Connor, B.A. 356 pp., illust. Little, Brown and Company, Boston. Price \$9.50.

The breadth of the material covered in this symposium is indicated by its title. The symposium is composed of 14 presentations in specific areas of medical research by persons of outstanding, international reputation. Each presentation is followed by a verbatim transcript of a discussion of the material and ideas presented. The various chapters vary in technique from a discussion of specific experiments to a more philosophical review of the present status of knowledge of a certain field. The topics themselves represent critical areas of endeavor in medical research today. Prof. Theorell's chapter on pyridine-nucleotide enzyme complexes presents a clear yet detailed picture of one critical facet in the attempt to understand exactly how enzymes perform their critical function of controlling almost all biological reactions. Prof. Schramm's chapter on the chemical basis of virus multiplication offers a clear understanding of important work on the chemical reactions involved in virus reproduction and the techniques used to unravel these reactions. The preceding section should be read in conjunction with the chapter on malignant transformation by Prof. Haddow in which many chemical similarities with the virus problem can be noted; the stimulating discussion following this chapter and largely devoted to the mechanism of the malignant change should not be overlooked. The very critical field of immunobiology and its relation to tissue transplantation is doubly covered by a chapter by Prof. Pauling and another chapter by Sir MacFarlane Burnet; the discussion section of the latter opens wide the controversy that has raged in this area for the past several years. Prof. Best's chapter on metabolism and hormones is a very good review of the present status of knowledge concerning energy metabolism, intermediary metabolism and the role of metabolic hormones in governing the reactions involved. The section dealing with research administration and support by

Dr. Shannon includes both mechanics and concepts; the discussion section includes comment on this problem in countries other than the United States. Other sections deal with equally important areas of research including neurophysiology, hormones and clinical investigation.

This volume offers material of considerable value to the clinician. It is a source wherein the physician can refresh his understanding and appreciation of a variety of important research problems that will one day place new tools at his disposal for treatment of human illness. Much of it cannot and should not be read rapidly and without effort. Yet with moderate diligence the reader can gain real insight into very specific areas of research. The one main concept that can be derived from this symposium is that the value of descriptive research has sharply diminished and the important work of the present and future will rest on a clear understanding of biological events at the molecular level.

E. M. NEPTUNE, JR., M.D.

BIOCHEMISTRY OF HUMAN GENETICS. Ciba Foundation Symposium. Edited by G. E. Wolstenholme, O.B.E., M.A., M.B., M.R.C.P. and Cecilia M. O'Connor, B.Sc. 347 pp., illust. Little, Brown and Company, Boston. Price \$9.50.

This symposium, composed of two panel-discussions, three general papers and thirteen research reports, was held the 13th to 16th of May, 1959 at Naples, Italy. Arranged by G. Montalenti for the Ciba Foundation and the International Union of Biological Sciences, with financial support from the Rockefeller Foundation, the program included the discussion of research in two general areas: the genetic control of metabolism and the biosynthesis of macromolecules. Unrestrained discussion by the symposium participants followed each presentation. In addition, the review papers and a panel discussion covered many other aspects of human genetics.

Primarily, this is not a symposium devoted to the elucidation of profound genetic theory. Most of the research papers discuss biochemical investigations of apparent heritable metabolic disorders; consequently, the major contributions are made, in effect, by non-geneticists. The chief domain of the geneticist-controlled crossing experiments supplemented with cytological analysis is beyond the scope of this symposium and is mentioned only with reference to the adaptation to human genetics of cell and tissue culture methods.

Blood workers will be especially interested in this volume, as investigations on blood groups, haemoglobin, serum proteins, and gamma globulin biochemical genetics are described in ten of the research reports.

In some instances particular attention has been paid to the relationship between the "inborn error of metabolism" and the clinical problem, although

this volume will be of limited use to the clinician. However, for those interested in the current status of the biochemical study of genetic aberrations in man, this symposium, through its outstanding participants, provides a critical summary of recent investigations. The publisher is to be congratulated for the expediency with which the symposium papers have been made available.

DAVID B. WALDEN

MALFORMATIONS CONGÉNITALES DU CERVEAU. By G. Heuyer, M. Feld, and J. Gruner, with 25 collaborators. 450 pp., 231 figs. Masson et Cie, Paris.

This work represents the proceedings of the first International Conference on Congenital Malformations of the Brain held in Paris in 1957. Conclusions reached at the conference are very ably discussed, the text is clear and concise, and the illustrations are excellent. It is certainly hoped that the English edition of this book will be available.

MICHAEL MONIAS, M.D.

A MANUAL OF TROPICAL MEDICINE. 3rd Ed. By George W. Hunter, III, Ph.D., Col. U.S.A. (Ret.); William W. Frye, Ph.D., M.D., Sc.D. (Hon.); and J. Clyde Swartzwelder, Ph.D. 892 pp., 323 illust., 8 in color. W. B. Saunders Company, Philadelphia and London. Price \$15.00.

The need for a compact manual of tropical medicine was felt by the Medical Department of the Army early in World War II and this was one of the military handbooks sponsored by the National Research Council. Today, the world-wide distribution of our military forces; the speed of transportation; the increasing interest in Africa and the tropical diseases peculiar to that continent all combine to make a new edition of this book a timely publication.

The work is divided into 77 sections each written by a specialist in the subject. As many of the authors are connected with the sciences allied to medicine, medical zoology, bacteriology, parasitology, and epidemiology are covered very completely. There is a fine section on laboratory diagnostic procedures, a most useful feature as the clinical laboratory is of more importance in the diagnosis of tropical diseases than in almost any other field of medicine. The section devoted to the control of arthropods of medical importance contains a most valuable table for ready reference and with one that follows on the toxicology of pesticides in the next chapter, gives authoritative information in a relatively small space. Helminthic diseases take up 176 pages, and virus and rickettsial conditions something over 100 pages. All of the tropical diseases are well described. Much space is given to the mycotic skin conditions so prevalent in the tropics.

Although in general the material on the course,

prognosis, and treatment is adequate, a clinician would probably wish to supplement it from some of the larger standard texts on tropical medicine. The illustrations, charts, and diagrams are clear and well placed in relation to the printed subject matter. The book is handsomely bound and the paper and typography are above praise. The authors points out that a complete bibliography would be impracticable in a book of this size but a number of leading works on tropical medicine are listed. There is an excellent and very complete index.

CAPT. LOUIS H. RODDIS, MC, USN, RET.

ARTHRITIS—MEDICAL TREATMENT AND HOME CARE.

By John H. Bland, M.D. 208 pp., illust. The Macmillan Company. Price \$4.95.

To provide arthritis patients and their families with sound, practical information about the treatment of joint diseases is the primary purpose of this exceptionally fine and timely monograph. Readers will also learn interesting and important data relative to the long history of the arthritides dating back into antiquity; the nature of these ailments; etiology; the pitfalls of quackery; as well as the benefits and limitations of drugs and physical therapy. Mainly devoted to rheumatoid arthritis and osteoarthritis, this authoritative book rightly emphasizes the great value of practical home treatment which can be very effective in controlling symptoms and decreasing disability, even in severe cases. Physicians as well as patients will profit greatly from this well written monograph.

COL. H. P. MARVIN, USA, RET.

THE CONCISE ENCYCLOPEDIA OF MODERN SURGERY.

By James Hale Rutledge, B.S., M.D., F.A.C.S. 308 pp., illust. Chilton Company, Philadelphia and New York. Price \$8.00.

Since wider dissemination of medical information for public consumption is a matter of great concern, this book could be significant. The surgeon who holds that "a little knowledge is a dangerous thing" may be burying his head in the sand while the average citizen grows ever more critical.

Written for students, allied professions, and for the laity, this bird's eye view of surgery uses language the average patient or teen-ager can understand, and is a worthwhile contribution. Brief, sympathetic, straightforward chapters cover everything from office etiquette and hospital routines to neurosurgery. Technical and controversial details are avoided. The chapter on surgery of the heart and blood vessels is particularly commendable, as are the author's own line drawings, but brief specific discussion of the surgical subjects of triage, bandaging, splinting, emergency resuscitation, and control of hemorrhage would be desirable.

DAVID WYATT AIKEN, M.D., F.A.C.S.

TYPICAL GYNECOLOGIC OPERATIONS. With Special Consideration of Technical Advantages. Dr. Siegfried Tapfer, Austria. Translated by L. M. Szamek, M.D. 81 pp., 168 plates. J. B. Lippincott Company, Philadelphia, Montreal. Price \$9.00.

Dr. Tapfer discusses in his book various types of abdominal hysterectomies, anterior and posterior colporrhaphy, vaginal hysterectomy, simple and radical vulvectomy. The illustrations are excellent particularly those of the Schauta-Amreich vaginal hysterectomy. The description of Wertheim's hysterectomy is no improvement over Wertheim's original description. The author advocates the use of curved Wertheim clamps; however, they do have the disadvantage of possible ureter inclusion, and therefore this recommendation will not be accepted by most gynecologists. The author also pays no attention to the uterosacral ligaments. The basic techniques advocated are similar to the ones followed by the Meig's School of Gynecology. Even though the book does not contribute anything new to American gynecology, it will be of interest to every gynecologist.

MICHAEL MONIAS, M.D.

THE EGO IN LOVE AND SEXUALITY. By Edrita Fried, Ph.D. 296 pp. Grune & Stratton, New York and London. Price \$5.50.

This book is divided into twelve chapters and logically develops the role of the ego in sexuality. Much has been written on the ego, the superego, and the id in psychoanalytic literature, but this author well develops the role which the passions and impulses play in the ego. The titles of the chapters indicate clearly how important this subject is: "Sexuality as the Experience of Change," "Ego Regression in Sexuality," "Hostility as a Defense against Love and Sexuality," "Unresponsiveness: A Form of Self-Protection," "Narcissistic Isolation: Quest for Similarity and Self-Repetition," "Homosexuality as a Disturbance in Human Relations," "Masturbation in Adults," "The Aims of Visual Curiosity," "Causes and Consequences of Clinging between Mates," "Repeating Childhood Experiences in Adult Sexuality and Love: A Review of the Oedipus Complex," "The Pains of Boredom," "Constancy and Change." Each point that she discusses is well illustrated with clinical cases taken from psychoanalytic psychotherapy, in both individual and group settings.

The author points out in chapter 2 that "Human beings, as they grow and develop, gradually acquire a variety of powers. They learn how to reason, how to organize their thoughts, their feelings and their lives; they discover how to exercise control over the world outside and the world of their own inner experiences. These skills—reasoning, organizing and control—and many others make up the entity that we call the human ego." She goes

on to state that "Love and sexuality move the world. They produce experiences that are indispensable for survival. . . . The sexual experience provides an even deeper enrichment of body and mind. It permits a party conscious relishing of ego-dissolution in progress, as well as the refreshing after-effects."

Although this book is written primarily for the practicing psychoanalyst, any physician who is interested in understanding human motivations, and especially the problems of sexual adjustment to living, will find this easily read book most stimulating. References are given throughout the volume and are listed at the end. The whole treatise is well indexed.

CDR. JAMES L. McCARTNEY (MC) USNR, RET.

RECENT ADVANCES IN SURGERY. 5th Ed. Edited by Selwyn Taylor, D.M., M.Ch., F.R.C.S. 28 contributors. 500 pp., illust. Little, Brown and Company, Boston. Price \$13.00.

This book brings us the latest developments in many fields of surgery, with a new set of topics and a new group of contributors, since the last edition was published five years ago.

The number of chapters (29), each dealing with a different subject, indicates how many important changes have taken place within the scope of surgery, and each deals with the surgeon's approach to his problems.

One cannot peruse the book without feeling that the time of dramatics in surgery is over. Surgery is no longer based on the occasional brilliant technical exploit, which may be by chance crowned with success. Rather, it is based on prolonged clinical and laboratory research, in which the fundamental sciences play a large part. Drama has largely disappeared from surgery. It is now a matter of hard work, both in the laboratory and the operating room, in both of which every detail of procedure is essential to successful outcome.

Experimental surgery, which is the direct outcome of experimental physiology, has paved the way for successful operations in the surgery of the pancreas, the liver, lymphedema, the heart, and the major arteries.

Among the subjects in which there have been great advances during the last five years are open heart surgery, the syndrome of metastasizing argentaffinoma (carcinoid tumor), and the transplantation of tissues and organs.

Of outstanding importance is the development of methods by which safe and deliberate surgical procedures may be carried out on the open and motionless heart. Open heart surgery has permitted, for the first time, effective and accurate methods of dealing with such conditions as aortic pulmonary stenosis, the repair of atrial and ventricular septal defects, the replacement of aortic valves, and some

of the more complicated congenital and acquired anomalies, such as the tetralogy of Fallot and mitral insufficiency.

Suppurative lesions of the lung, such as lung abscess, empyema, suppurative pneumonia, and bronchiectasis and their complications have declined until they are now uncommon. When such lesions as abscess of the lung do occur, they can be controlled and localized by antibiotics, following which definitive lung resection can be carried out. Drainage of an abscess—once a standard procedure—is now rarely performed.

Anesthesia has continued to improve and this improvement enables both the surgeon and the patient to approach an operative procedure of magnitude with greater confidence than before. Infection, however, is still a very troublesome matter and one which is far from being solved. It has undoubtedly been complicated by the injudicious use of antibiotics.

AMOS R. KOONTZ, M.D.

CHRISTOPHER'S TEXTBOOK OF SURGERY. Edited by Loyal Davis, M.D. Seventh Edition with 1597 Illustrations on 810 Figures. W. B. Saunders Company, Philadelphia and London. Price \$17.00.

This leading text now in its 24th year has reached an even higher degree of excellency. The outstanding qualifications of the 82 contributors under the editorship of Dr. Loyal Davis could be expected to produce a most comprehensive authoritative textbook and this is accomplished in every respect. The addition of a biographical sketch of each contributor appearing beneath his or her name is a most welcome innovation. The addition of a photograph of the author would, it is believed, be helpful.

The broad scope of surgery is presented in a readily and easily readable manner. It is not feasible to review each subject or chapter, but there are three that are especially attractive, namely: The History of Surgery by Dr. Allen O. Whipple. Surgeons, whether beginners or masters will enjoy and be stimulated by this contribution. Principles of Preoperative and Postoperative Care, by Richard L. Varco offers those whose busy practice exacts their almost total time, 41 pages of refreshing and useful knowledge for his daily work. For the resident this chapter is a must. The chapter on the Heart and Pericardium by Dr. Charles A. Hufnagel will excite all surgeons in the newest of our successes in surgical endeavor. Finally, the editor has summarized surgical effort far better than any textbook can portray by stating, "It cannot be emphasized too often that the education of a surgeon involves many fields of learning, as well as the appreciation of tradition, the only way by which wisdom can be passed on from generation to generation, and the realization that integrity, ideals, judgment, decision, action and the practice of the

Golden Rule must often be upheld or exercised instantaneously by the Surgeon."

This textbook is a friend, companion and requirement for the surgeon.

BRIG. GEN. JAMES H. FORSEE, MC, USA

X-RAY TECHNOLOGY. 2nd Ed. By Charles A. Jacobi, B.Sc., R.T. (A.R.X.T.), M.T. (A.S.C.P.); and Donald E. Hagen, R.T. (A.R.X.T.). 453 pp., 320 illust. The C. V. Mosby Company, St. Louis. Price \$10.00.

This book is a collection of useful information concerning the principles of radiographic technique. A fundamental knowledge of physics and mathematics has been assumed in the excellent discussion of its application to radiographic practice. A mastery of the principles outlined should be sufficient for any practicing technician or student. Many chapters have been completely rewritten since the first edition, and a new chapter has been added.

In addition to the practical aspects of the physical principles involved, numerous anatomic drawings, photographs, and roentgenograms are reproduced to demonstrate the proper positioning of the patient for every examination that can be performed in the average x-ray department. Many of these illustrations appear originally in Merrill's "Atlas of Roentgenographic Positions." Starting techniques are offered with each examination. Studies requiring specialized equipment are mentioned but no detailed discussion is included. A glossary of medical terms is added which may be of some value to the novice technician.

The volume is an asset to the library of any x-ray technician and is of value to anyone whose interest lies in the production of satisfactory radiographic studies.

COL. JOHN A. ISHERWOOD, MC, USA

PRINCIPLES OF ORTHOPAEDIC SURGERY. Revised Edition. By Paul C. Colonna, M.D. 799 pp., 500 figs. Little, Brown & Company, Boston and Toronto. Price \$22.00.

This is a revised edition of a text published ten years ago. In this edition the author has kept current the concepts of chronic orthopaedic conditions and placed emphasis on the ever increasing problem of trauma and its resultant disabilities.

The first two chapters are devoted to the physiology and pathology of bones and joints. The author discusses concisely the applied anatomy, the diseases, injuries and treatment of each region of the body in a clear, easy to read fashion. There are a number of excellent diagrams and figures which greatly augment and complement the text. The chapter on the principles of apparatus is well done and a valuable addition.

The author's method of recording joint motion is somewhat confusing; however, this does not detract from the overall excellence of the book.

This is practical text which should be of great value to the general practitioner, intern, and orthopaedic resident. I believe the advanced student of orthopaedics will find it interesting but disappointing in details.

COL. JOSEPH W. BATCHE, MC, USA

INTRAARTERIAL INFUSION OF PROCAINE IN THERAPEUTIC PRACTICE. By N. K. Gorbadei. Translated from Russian. 135 pp. Consultants Bureau, Inc., New York. Price \$7.50.

This book is a translation from Russian of a book by a member of the Leningrad Sanitary-Hygiene Medical Institute.

The purpose is to describe the experiences and theories on the use of intraarterial infusions of procaine as a therapeutic procedure. The author states there is an important difference in the drug action when it is administered intraarterially rather than intravenously. He postulates that the drug acts directly on the vascular nerve supply and on the central nervous system and hence gets a better generalized body response. He claims good results in the use of this form of treatment in the following conditions: Peptic ulcer, bronchial asthma, angina pectoris, hypertension, lumbago and sciatica, infectious polyarthritis and a number of other diseases. His greatest experience has been in the treatment of peptic ulcer using various criteria such as relief of pain, changes in the blood picture, roentgenological findings, and the acid secreting function of the stomach in peptic ulcer patients in evaluating his results. The results are not impressive and the reproductions of photographs are of such poor quality as to be of little value.

Contraindications are listed as follows for intraarterial procaine: Pulmonary infarction, myocardial infarction, nephritis, nephrosis, nephro-angina sclerosis, amyloidosis of the kidneys, tumors of the kidney, bleeding and penetrating gastric and duodenal ulcer, carcinoma of the stomach and intestines, intestinal hemorrhage, all forms of liver disease and diseases of the endocrine gland.

There is a supplement written by a different author dealing with the treatment of patients with hypertension by intraarterial infusion of procaine solution. He states however that the more severe the disease the less effective is this treatment. It is noted that patients with severe angina and cardiac diseases may have a deterioration of their status following this treatment.

The form of treatment proposed in this book is viewed with skepticism and its value should be reassessed on more scientific investigation and results. A report such as this would most probably have been made in a medical journal in the United States. The price of this volume, concerning such doubtful information, is not considered justified by this reviewer.

D. O. LYNN, M.D.

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